

ILLUSTRATIONS OF DIAMOND INDUSTRY

— FROM —

"MINING THE GROUND"

— TO —

"DIAMONDS CLASSIFIED FOR SHIPMENT"

J. E. MIDDLEBROOK, PHOTO.

"KIMBERLEY. SO. AFRICA"











## THE DIAMOND INDUSTRY ILLUSTRATED.

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*In submitting this Volume of Photographic Views of the Griqualand West Diamond Industry, in all its operations, to the Public, J. E. Middlebrook ventures to think that it will prove an interesting South African Souvenir, as well as being in some sense instructive of the various processes by which the Diamond is won from the bowels of the earth. These Pictures also, it is hoped, strikingly illustrate the importance and extent of the most valuable of Cape Colonial Industries.*

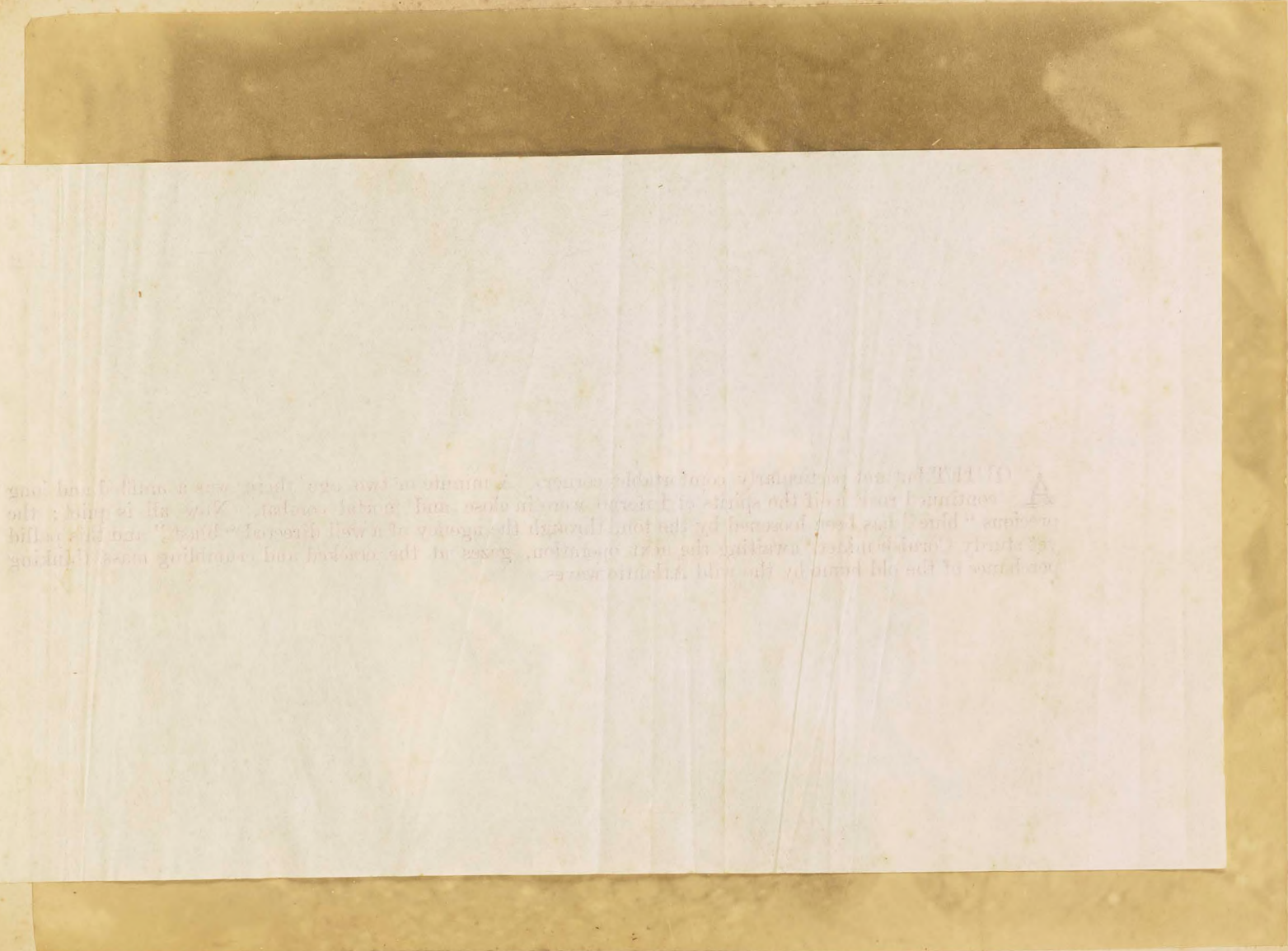
*J. E. M. desires to express to the De Beers Consolidated Mines, Ltd., his acknowledgments of the courtesy and readily granted facilities at all times extended to him, in the somewhat laborious work of taking the Views (underground as well as on the surface) which are now presented to the Public in Album form.*

*The "Premier" Studio,*

*Kimberley, June, 1891.*



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THE MINE.—The "Blueground" after Blasting (Underground).

DEWATION

ALAN R. LIPWORTH

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A QUIET but not particularly comfortable corner. A minute or two ago there was a muffled and long continued roar, as if the spirits of Inferno were in close and mortal combat. Now all is quiet; the precious "blue" has been loosened by the ton, through the agency of a well directed "blast" and this pallid yet sturdy Cornish miner, awaiting the next operation, gazes at the cracked and crumbling mass, thinking perchance of the old home by the wild Atlantic waves.



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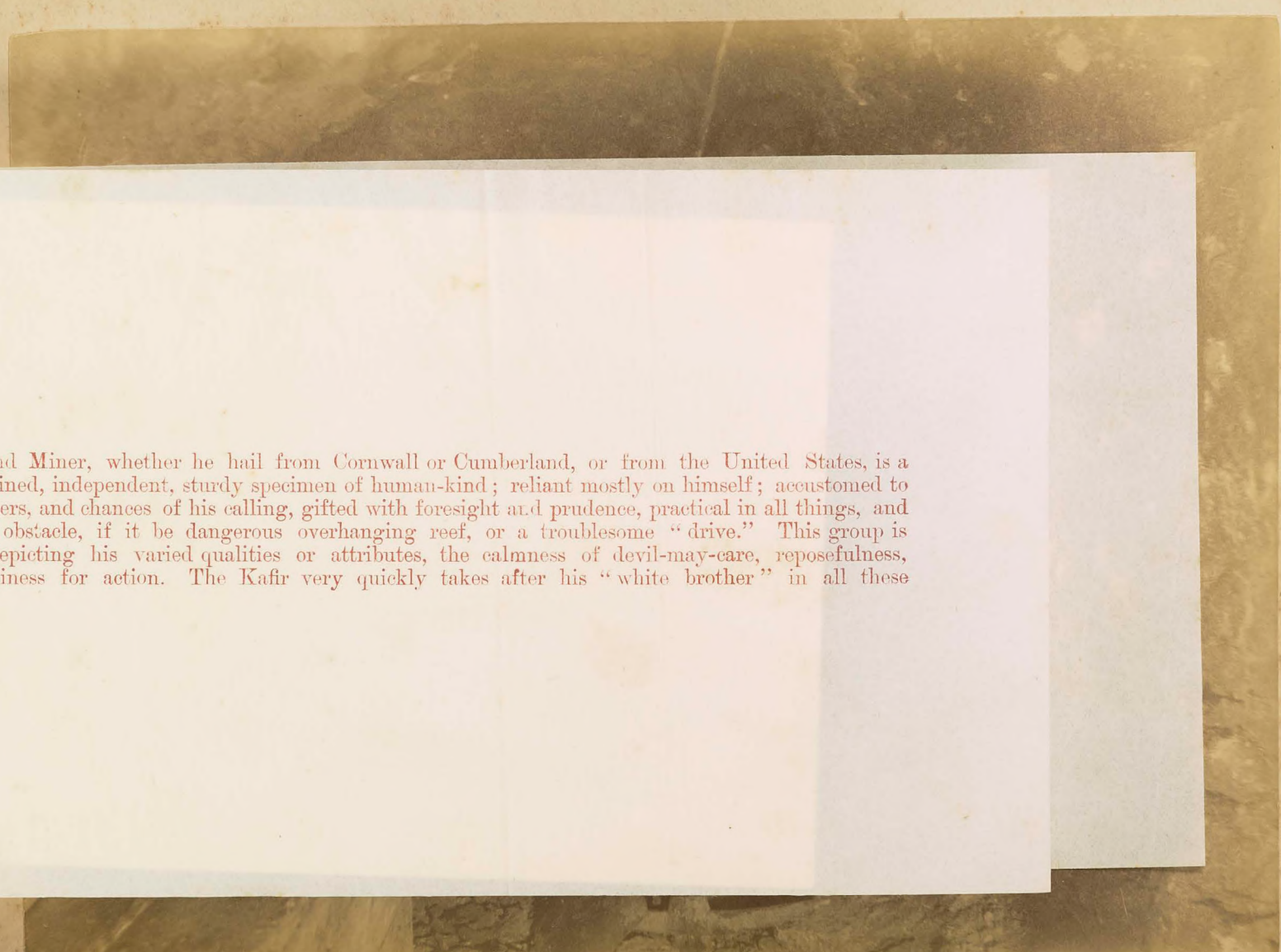
THE MINE.—The "Blueground" after Blasting (Underground).





THE MINE.—A group of Miners Underground.

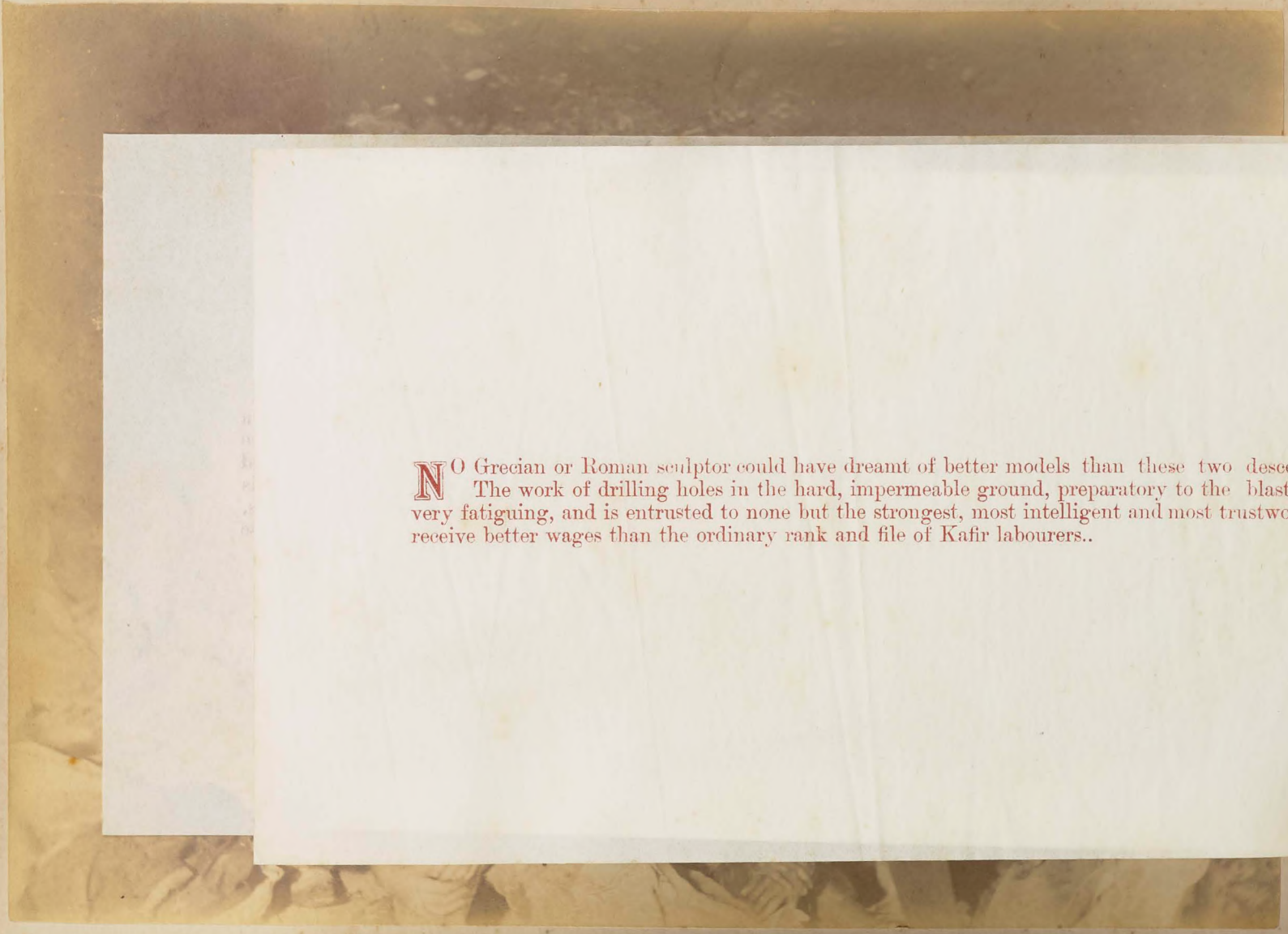




**T**HE Diamond Miner, whether he hail from Cornwall or Cumberland, or from the United States, is a self-contained, independent, sturdy specimen of human-kind; reliant mostly on himself; accustomed to the shifts, dangers, and chances of his calling, gifted with foresight and prudence, practical in all things, and fearless of all obstacle, if it be dangerous overhanging reef, or a troublesome "drive." This group is interesting as depicting his varied qualities or attributes, the calmness of devil-may-care, reposefulness, and alert readiness for action. The Kafir very quickly takes after his "white brother" in all these respects.

THE MINE.—Native Miners Drilling Underground.





**N**O Grecian or Roman sculptor could have dreamt of better models than these two descendants of Ham. The work of drilling holes in the hard, impermeable ground, preparatory to the blasting operation, is very fatiguing, and is entrusted to none but the strongest, most intelligent and most trustworthy natives, who receive better wages than the ordinary rank and file of Kafir labourers..

THE MINE.—A group of Miners Underground.





THE MINE.—Native Miners Drilling Underground.






THE MINE.—Shoot for bringing "ground" from a higher level (Underground).



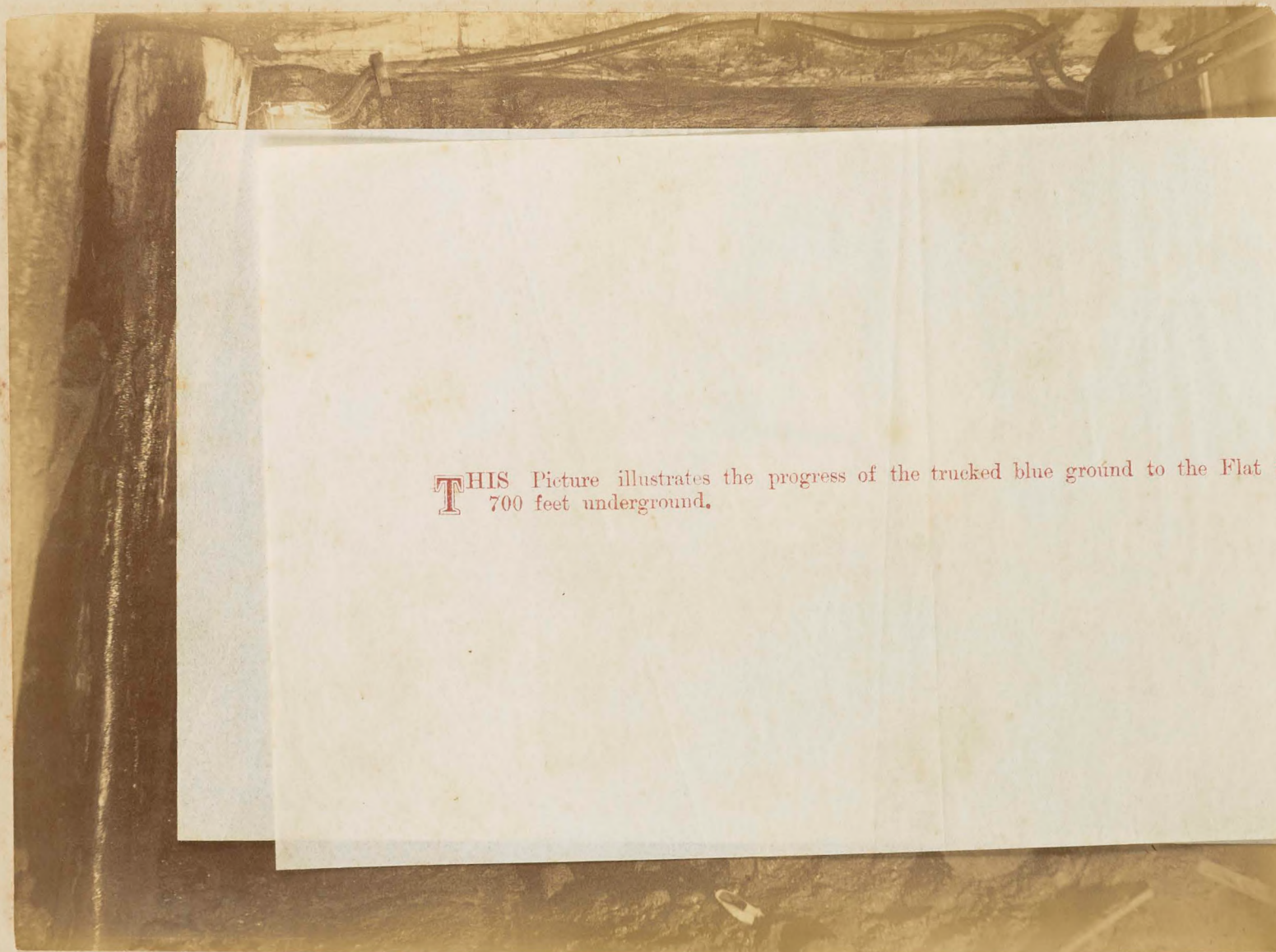
THE Diamond Miner who invented the "Shoot" proved a benefactor to the shareholder, because by its simple yet all important mechanism there is hardly any necessity for the native labourer, or indeed anyone, to handle the blue ground. The trucks are placed alongside the "Shoot," the boards of which are drawn aside, and the soil drops into the vehicles to be pushed or hauled to the Flat Sheet. It is well known that the smaller the necessity for peculant labourers to manipulate the blue ground, the smaller the chances of diamond thefts. Hence the importance of the Shoot in the economy of diamond production.



JUNCTION OF TWO TUNNELS  
AT N° IV LEVEL. 40036

THE MINE.—Trucking "ground" to Flat sheet (Underground).





**T**HIS Picture illustrates the progress of the trucked blue ground to the Flat Sheet, at a depth of 700 feet underground.

THE MINE.—Shoot for bringing “ground” from a higher level (Underground).





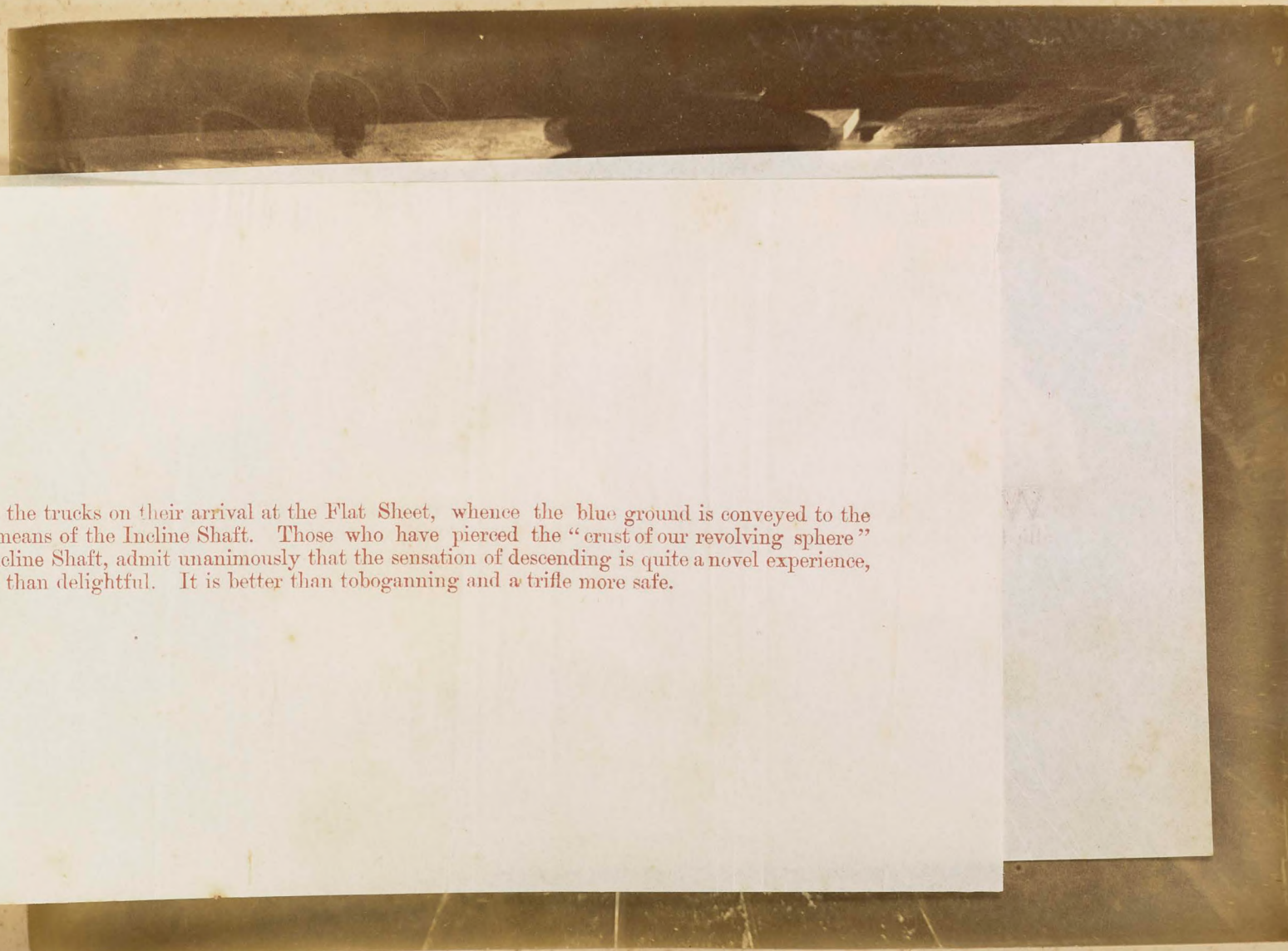
THE MINE.—Trucking "ground" to Flat sheet (Underground).





THE MINE.—Flat sheet on 700 Level, bottom of Incline Shaft (Underground).

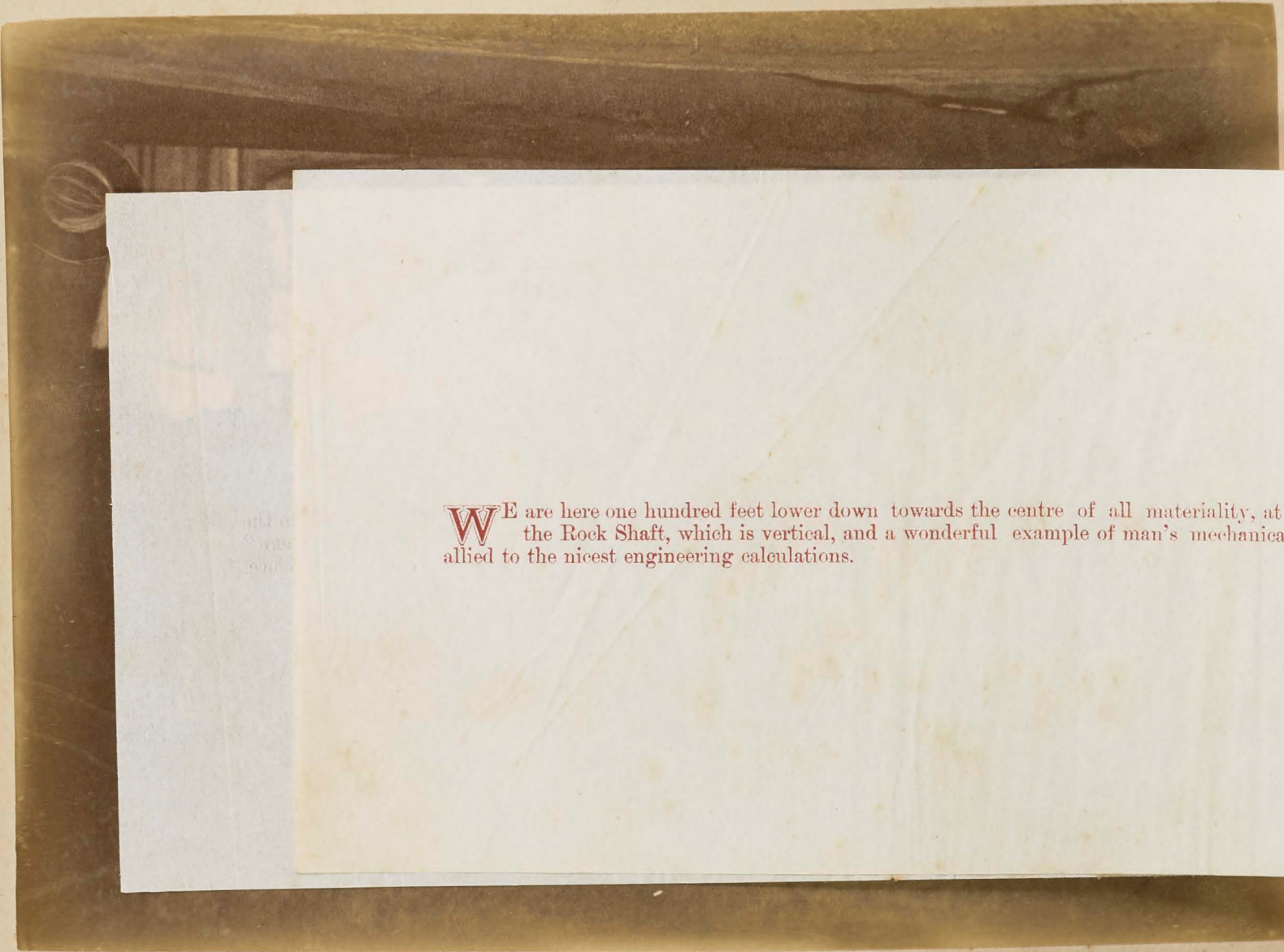




**H**ERE we have the trucks on their arrival at the Flat Sheet, whence the blue ground is conveyed to the surface, by means of the Incline Shaft. Those who have pierced the "crust of our revolving sphere" by means of the Incline Shaft, admit unanimously that the sensation of descending is quite a novel experience, and no more novel than delightful. It is better than tobogganing and a trifle more safe.

THE MINE.—Flat sheet on 800 Level, bottom of Rock Shaft (Underground).

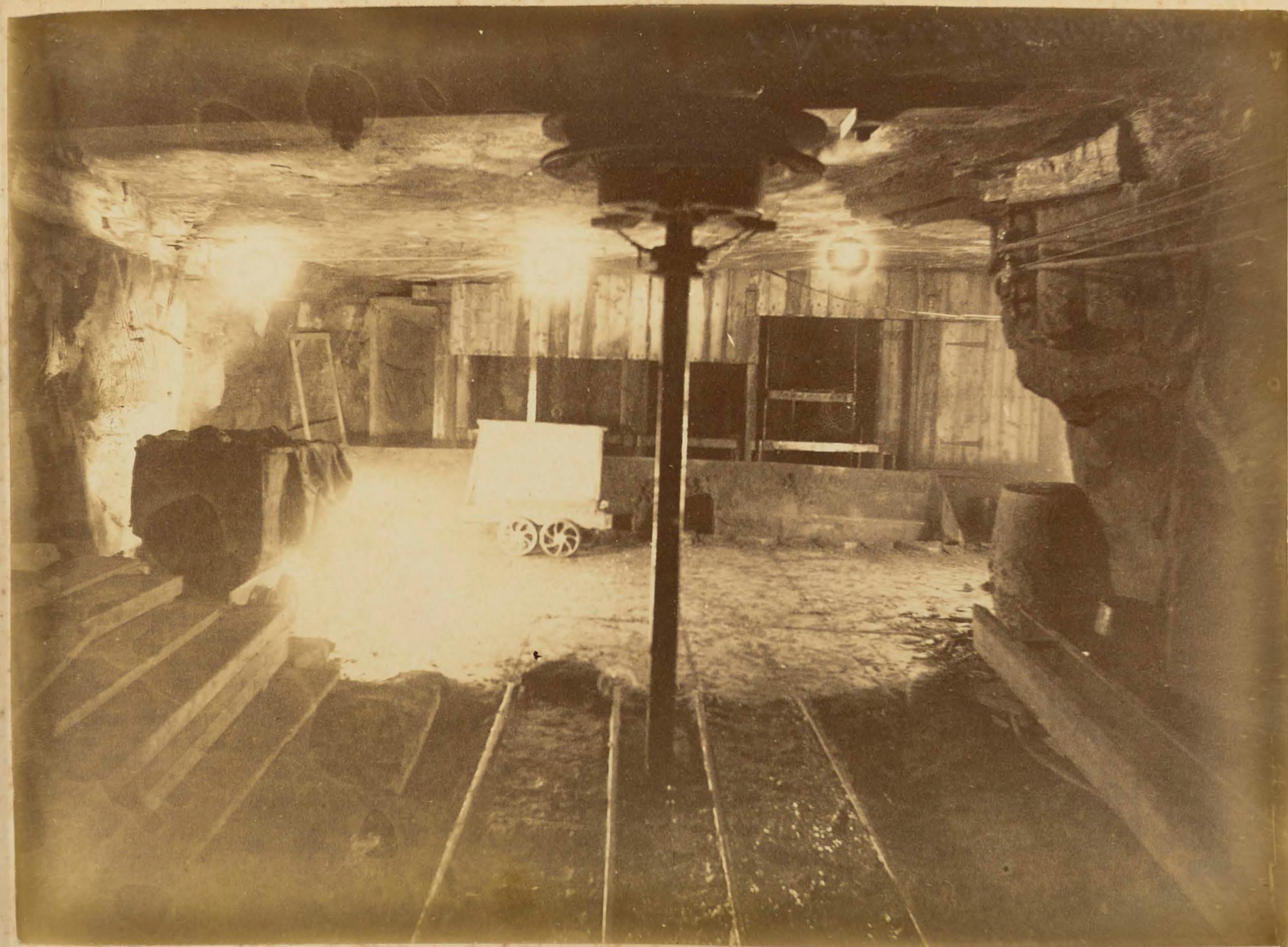




**W**E are here one hundred feet lower down towards the centre of all materiality, at the 800 feet level of the Rock Shaft, which is vertical, and a wonderful example of man's mechanical, constructive skill, allied to the nicest engineering calculations.

**THE MINE.**—Flat sheet on 700 Level, bottom of Incline Shaft (Underground).





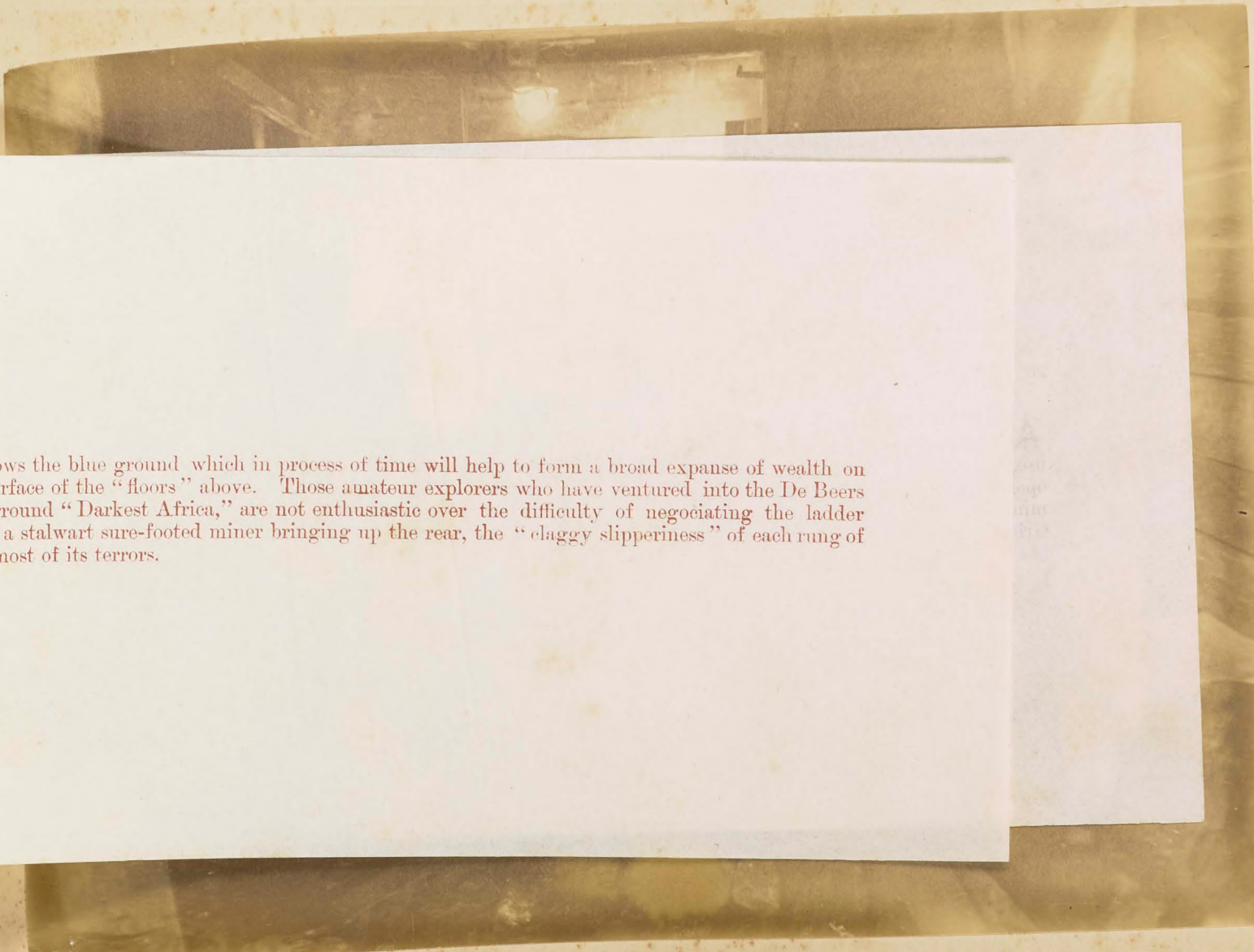
THE MINE.—Flat sheet on 800 Level, bottom of Rock Shaft (Underground).





THE MINE.—Ladder way on 600 Level, shewing "Blueground" (Underground).

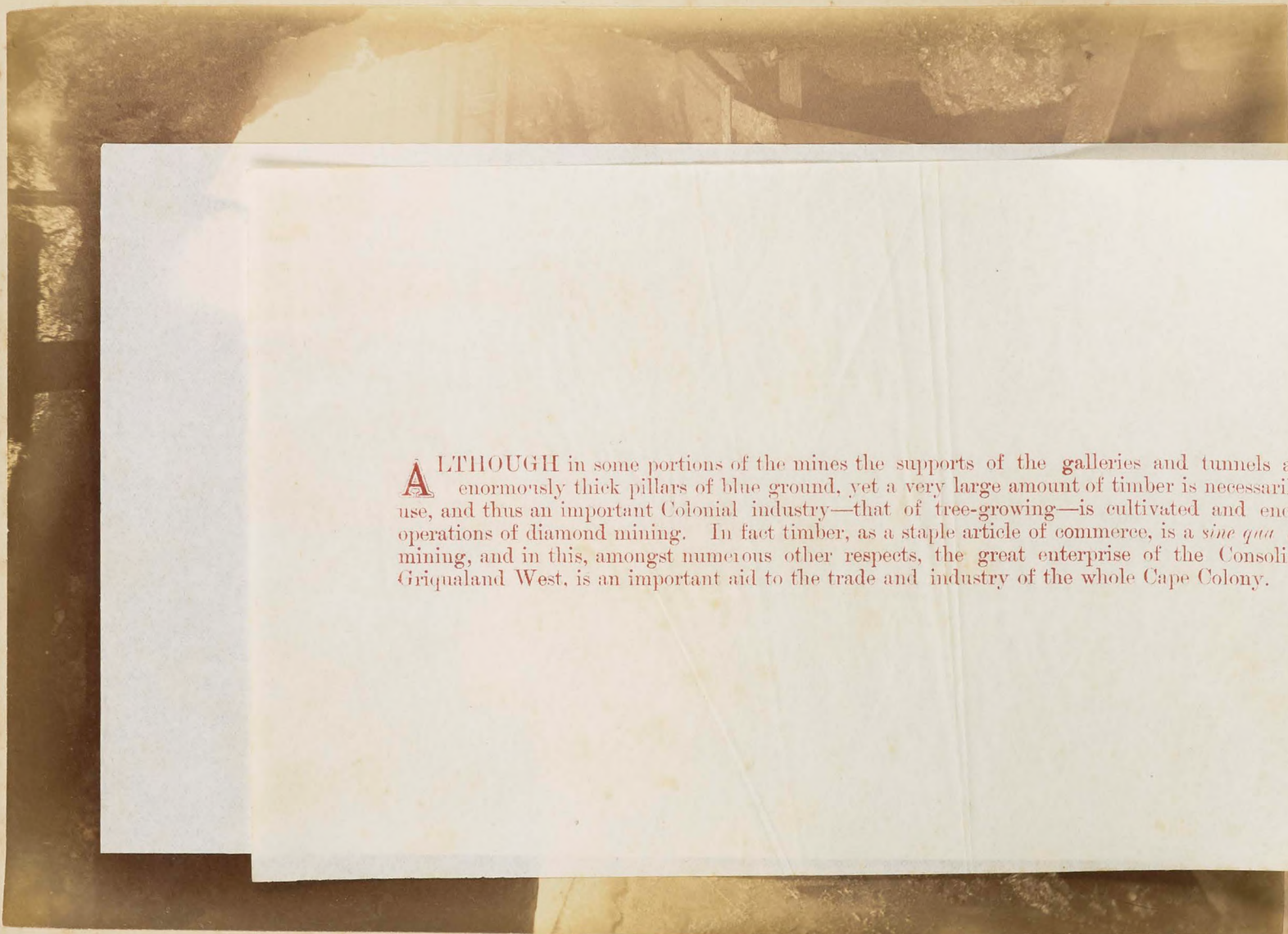




THIS view shows the blue ground which in process of time will help to form a broad expanse of wealth on the even surface of the "floors" above. Those amateur explorers who have ventured into the De Beers section of underground "Darkest Africa," are not enthusiastic over the difficulty of negotiating the ladder ways. But with a stalwart sure-footed miner bringing up the rear, the "claggy slipperiness" of each rung of the ladder loses most of its terrors.

THE MINE.—Ladder way on 700 Level. Timbered. (Underground.)





**A**LTHOUGH in some portions of the mines the supports of the galleries and tunnels are composed of enormously thick pillars of blue ground, yet a very large amount of timber is necessarily brought into use, and thus an important Colonial industry—that of tree-growing—is cultivated and encouraged by the operations of diamond mining. In fact timber, as a staple article of commerce, is a *sine qua non* of diamond mining, and in this, amongst numerous other respects, the great enterprise of the Consolidated Mines of Griqualand West, is an important aid to the trade and industry of the whole Cape Colony.

THE MINE.—Ladder way on 600 Level, shewing "Blueground" (Underground).





THE MINE.—Ladder way on 700 Level. Timbered. (Underground.)

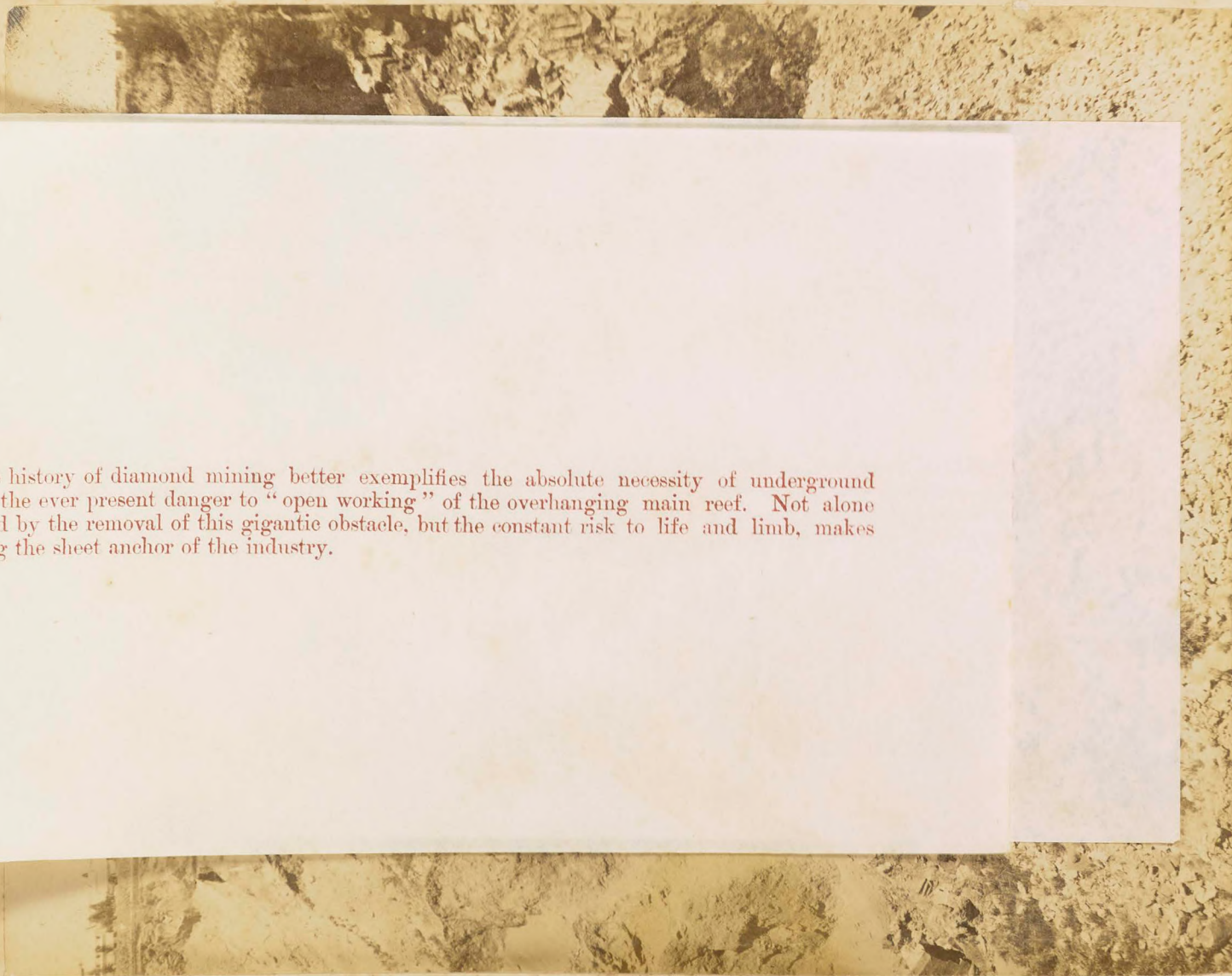




THE MINE.—Open Works, overhanging Main Reef.



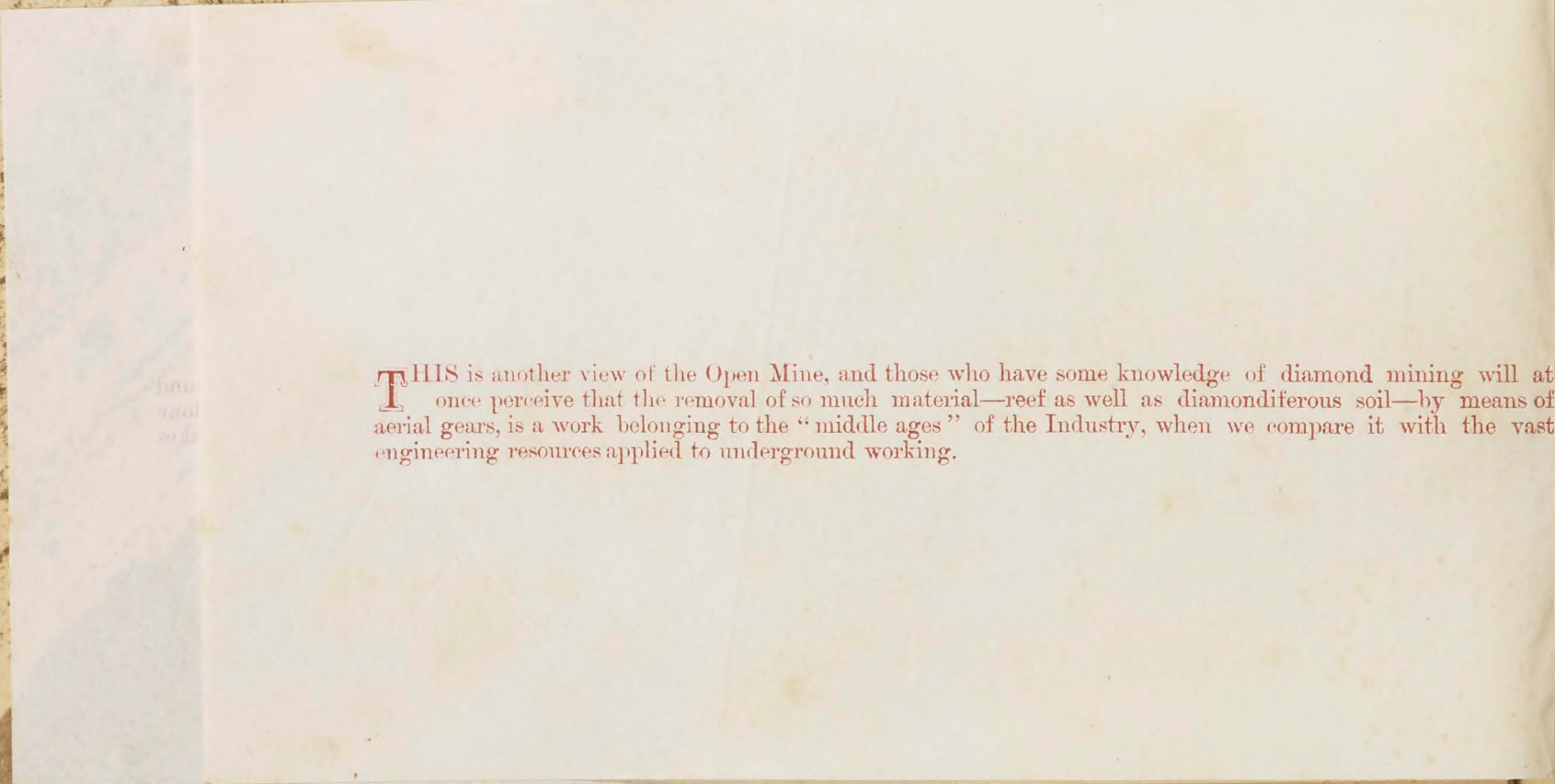
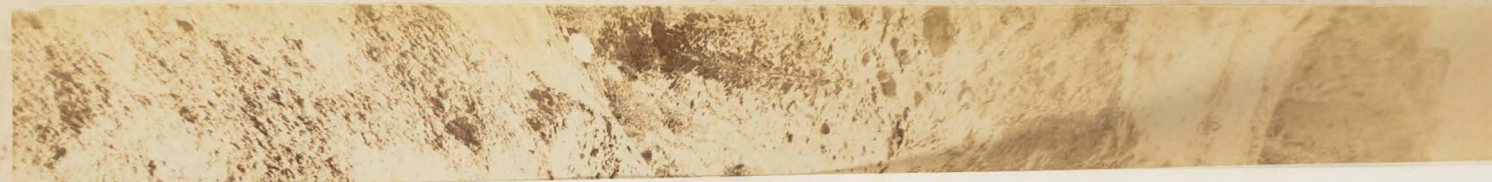
**N**OTHING in the history of diamond mining better exemplifies the absolute necessity of underground working, than the ever present danger to "open working" of the overhanging main reef. Not alone the great cost entailed by the removal of this gigantic obstacle, but the constant risk to life and limb, makes underground working the sheet anchor of the industry.



THE MINE.—Open Works, shewing Searching House in the distance. ✓



THE MINE.—Open Works, overhanging Main Reef.



THIS is another view of the Open Mine, and those who have some knowledge of diamond mining will at once perceive that the removal of so much material—reef as well as diamondiferous soil—by means of aerial gears, is a work belonging to the “middle ages” of the Industry, when we compare it with the vast engineering resources applied to underground working.







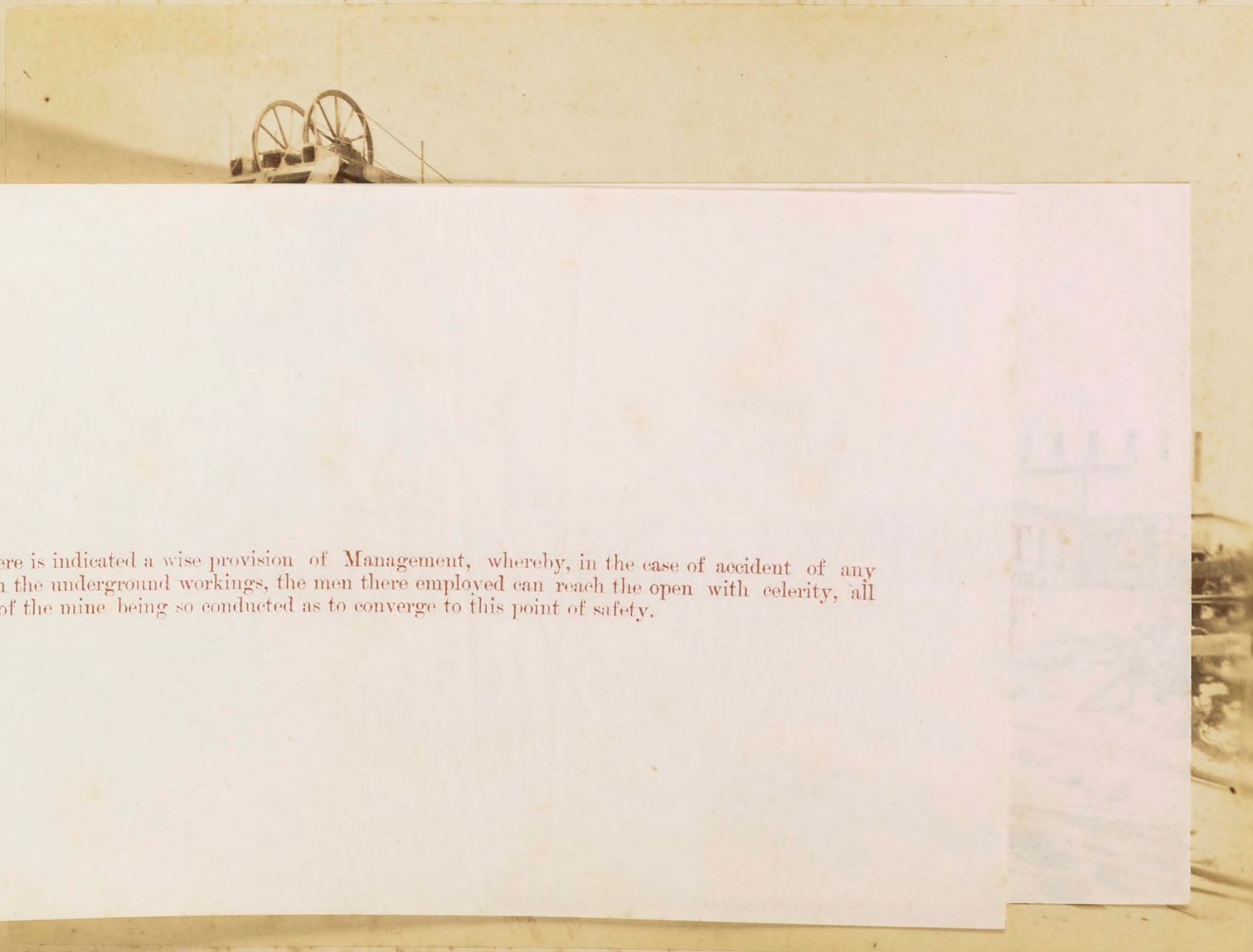
THE MINE.—Open Works, shewing Searching House in the distance. ↙





THE MINE.—Open Works, Escape Shaft. ✓



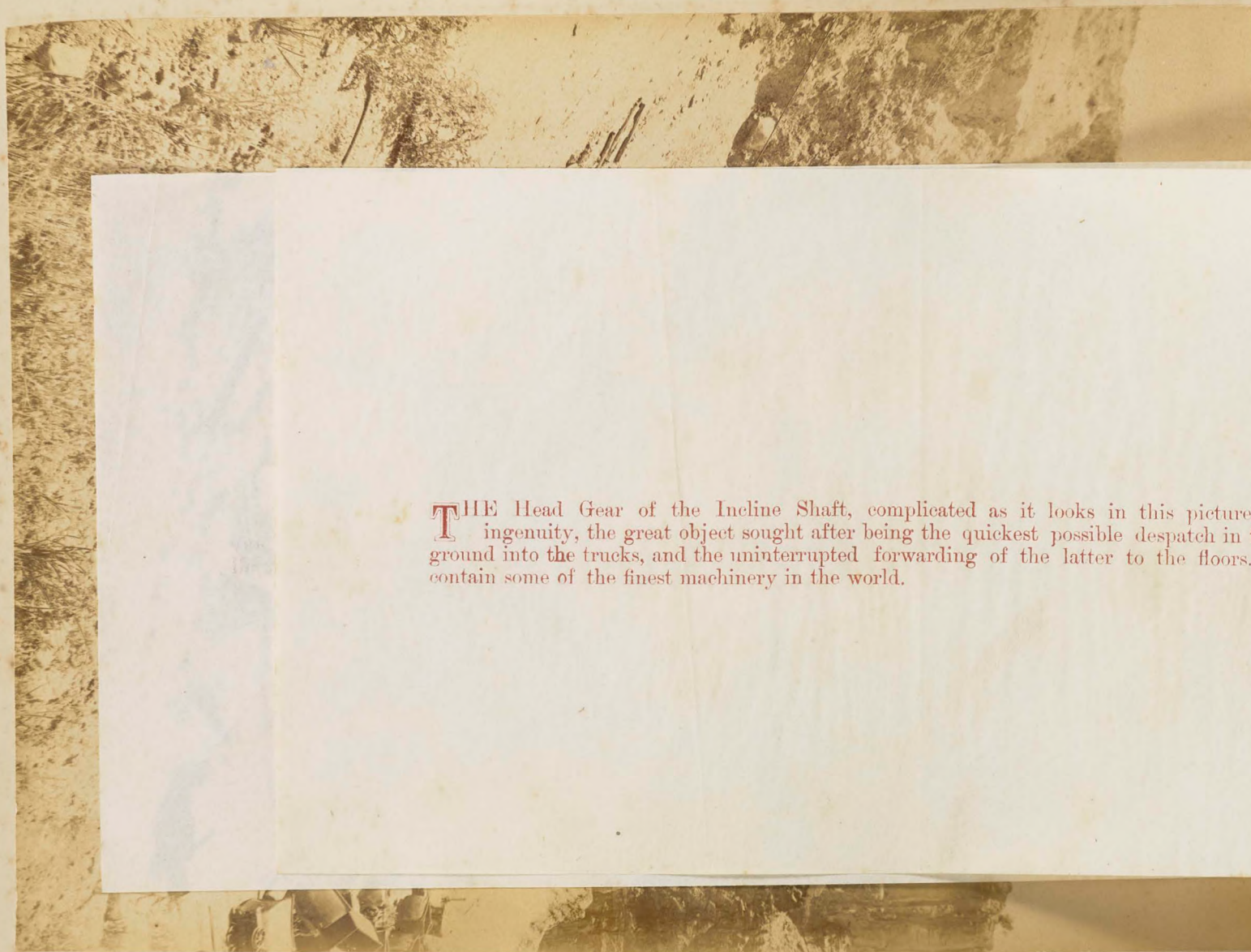


**I**N this view there is indicated a wise provision of Management, whereby, in the case of accident of any magnitude in the underground workings, the men there employed can reach the open with celerity, all the ramifications of the mine being so conducted as to converge to this point of safety.

Head Gear Incline Shaft, shewing Engine Houses and Skip Tipping. ✓

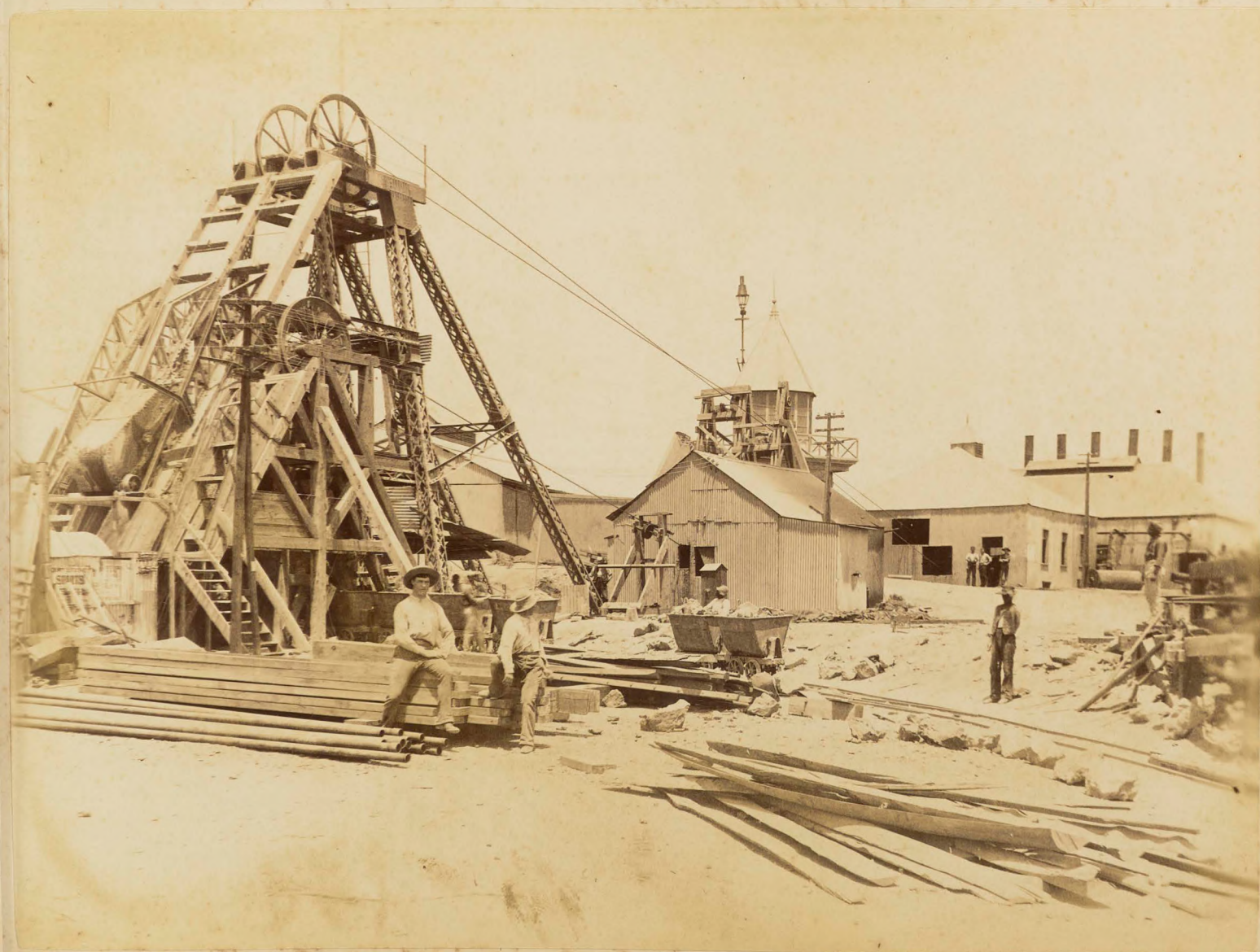


THE MINE.—Open Works, Escape Shaft.



THE Head Gear of the Incline Shaft, complicated as it looks in this picture, is a marvel of simple ingenuity, the great object sought after being the quickest possible despatch in the tipping of the blue ground into the trucks, and the uninterrupted forwarding of the latter to the floors. The engine houses contain some of the finest machinery in the world.





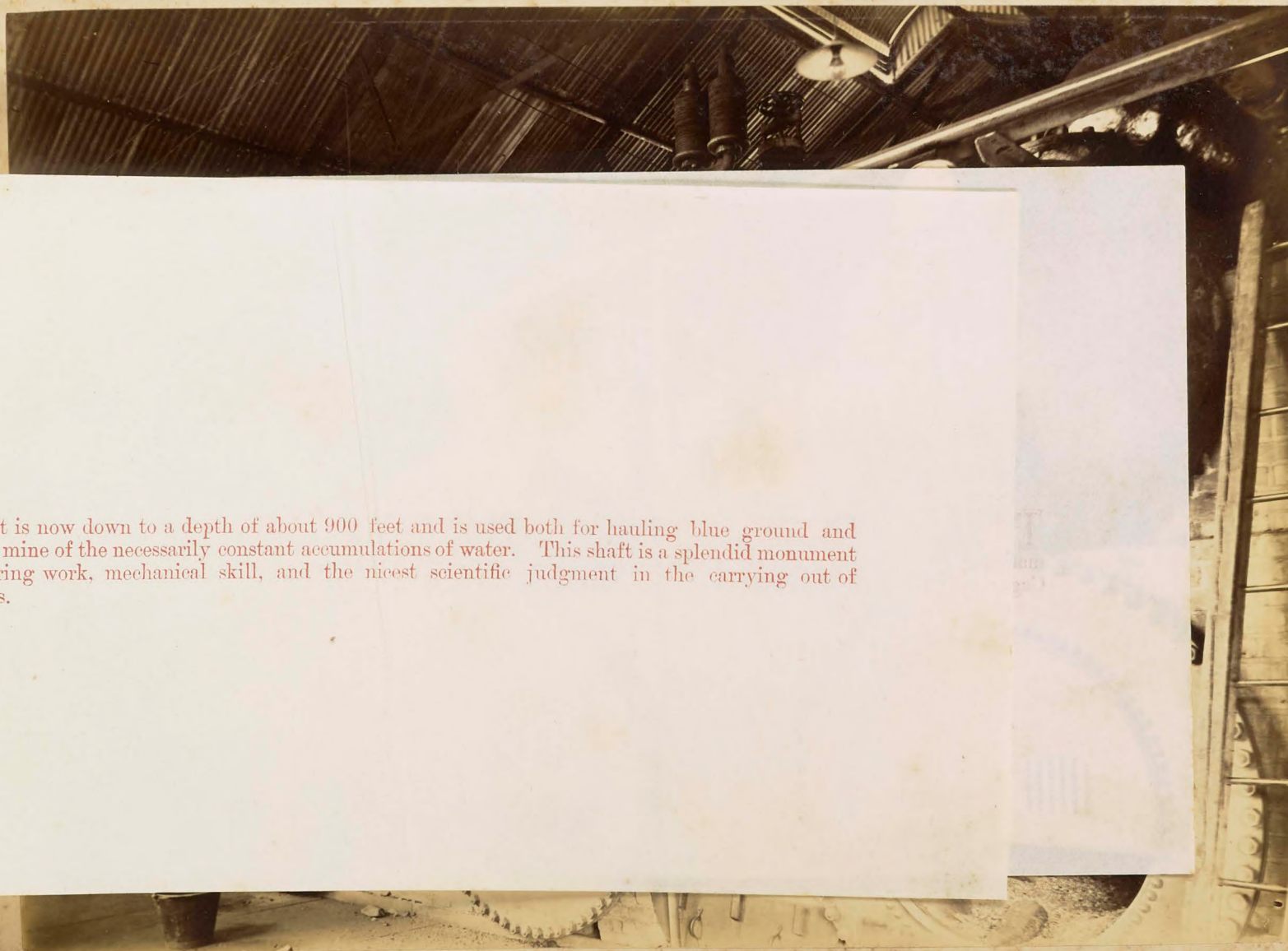
Head Gear Incline Shaft, shewing Engine Houses and Skip Tipping. ✓





Head Gear Rock Shaft shewing Engine Houses. ✓

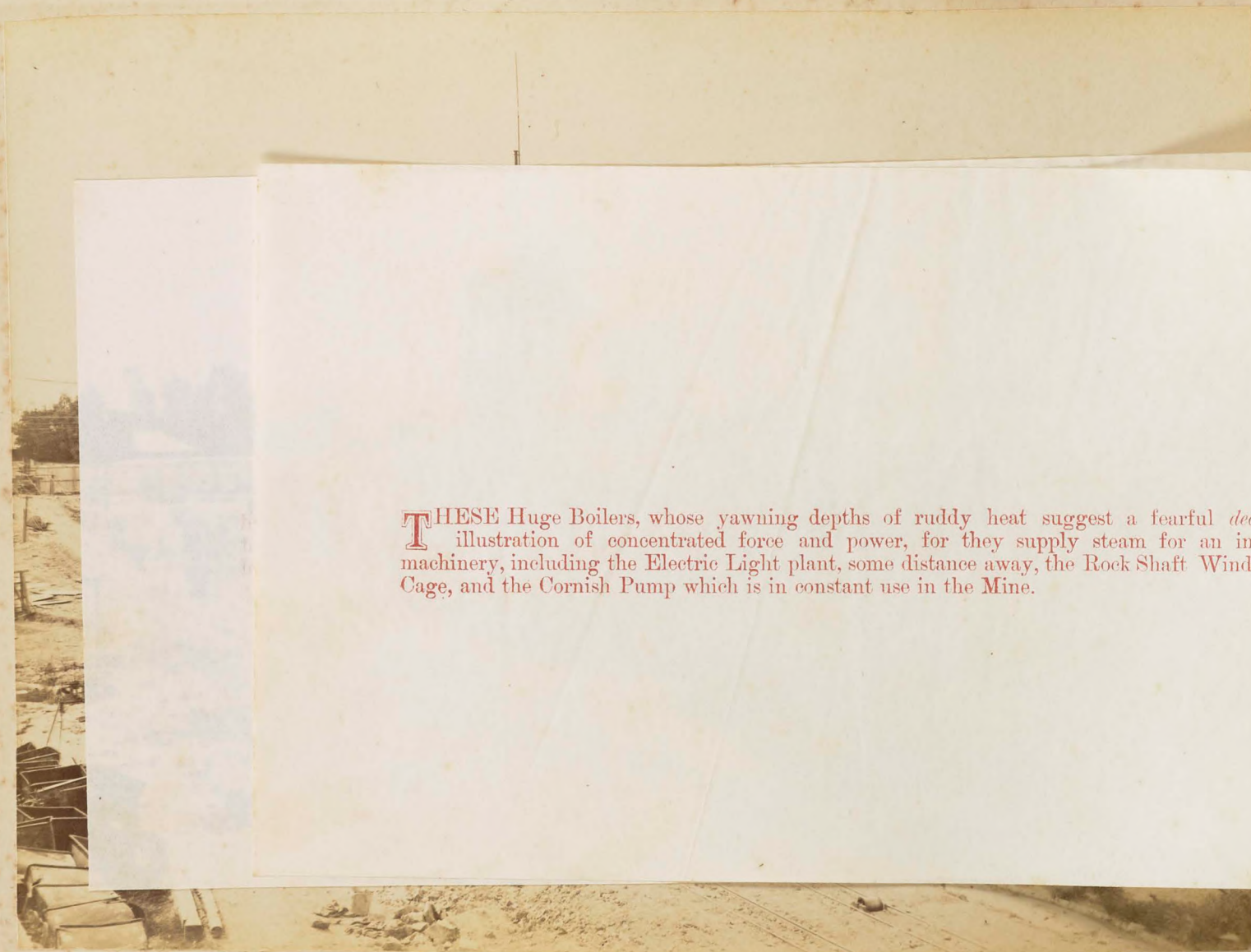




THE Rock Shaft is now down to a depth of about 900 feet and is used both for hauling blue ground and draining the mine of the necessarily constant accumulations of water. This shaft is a splendid monument of patient, persevering work, mechanical skill, and the nicest scientific judgment in the carrying out of constructive details.

The Boilers supplying Steam for Electric Light Plant, Rock Shaft Winding Engine. Man-cage and Cornish Pump. ✓

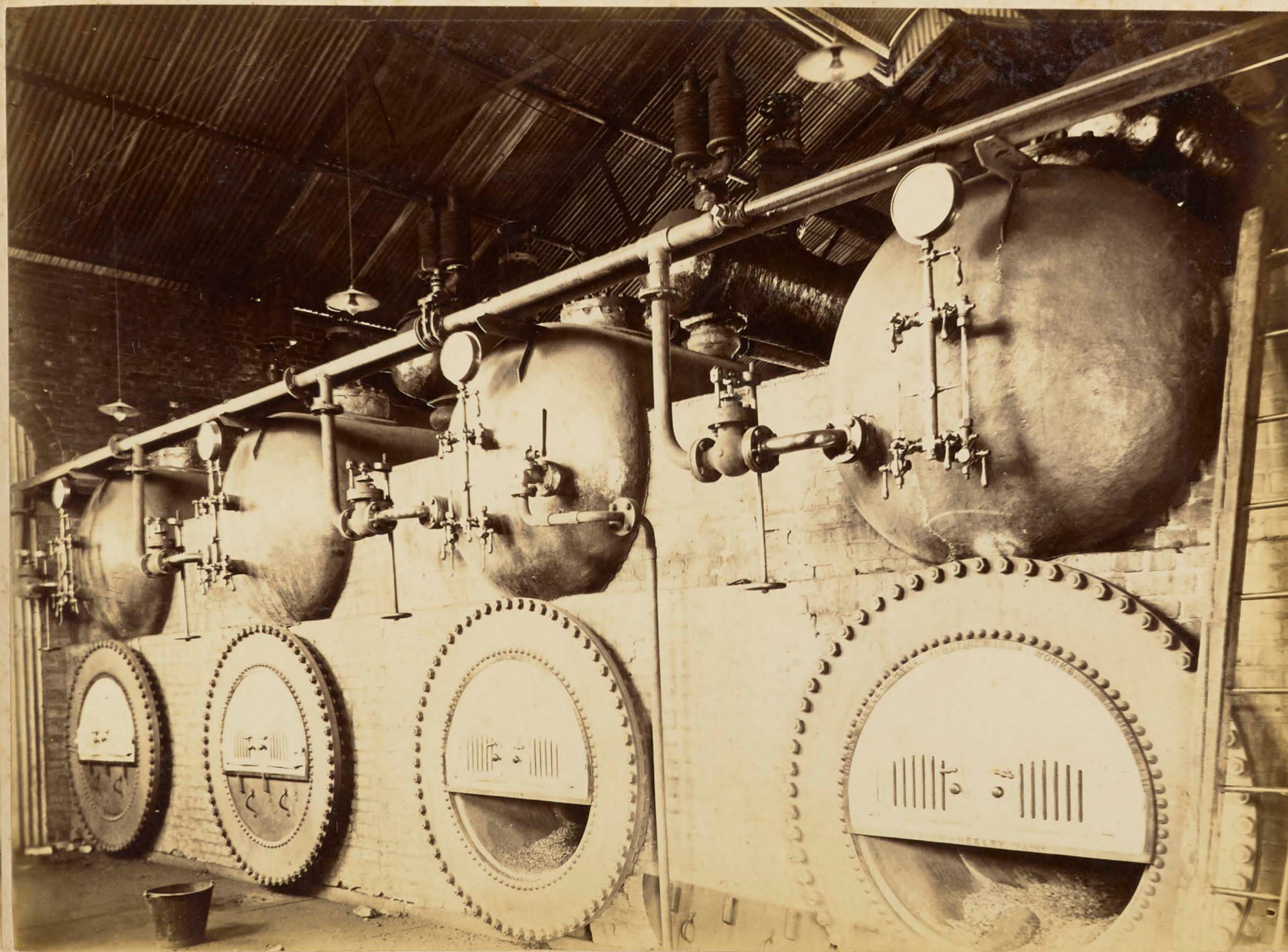




THESE Huge Boilers, whose yawning depths of ruddy heat suggest a fearful *decensusaverni*, are an illustration of concentrated force and power, for they supply steam for an immense quantity of machinery, including the Electric Light plant, some distance away, the Rock Shaft Winding Engine, the Man Cage, and the Cornish Pump which is in constant use in the Mine.

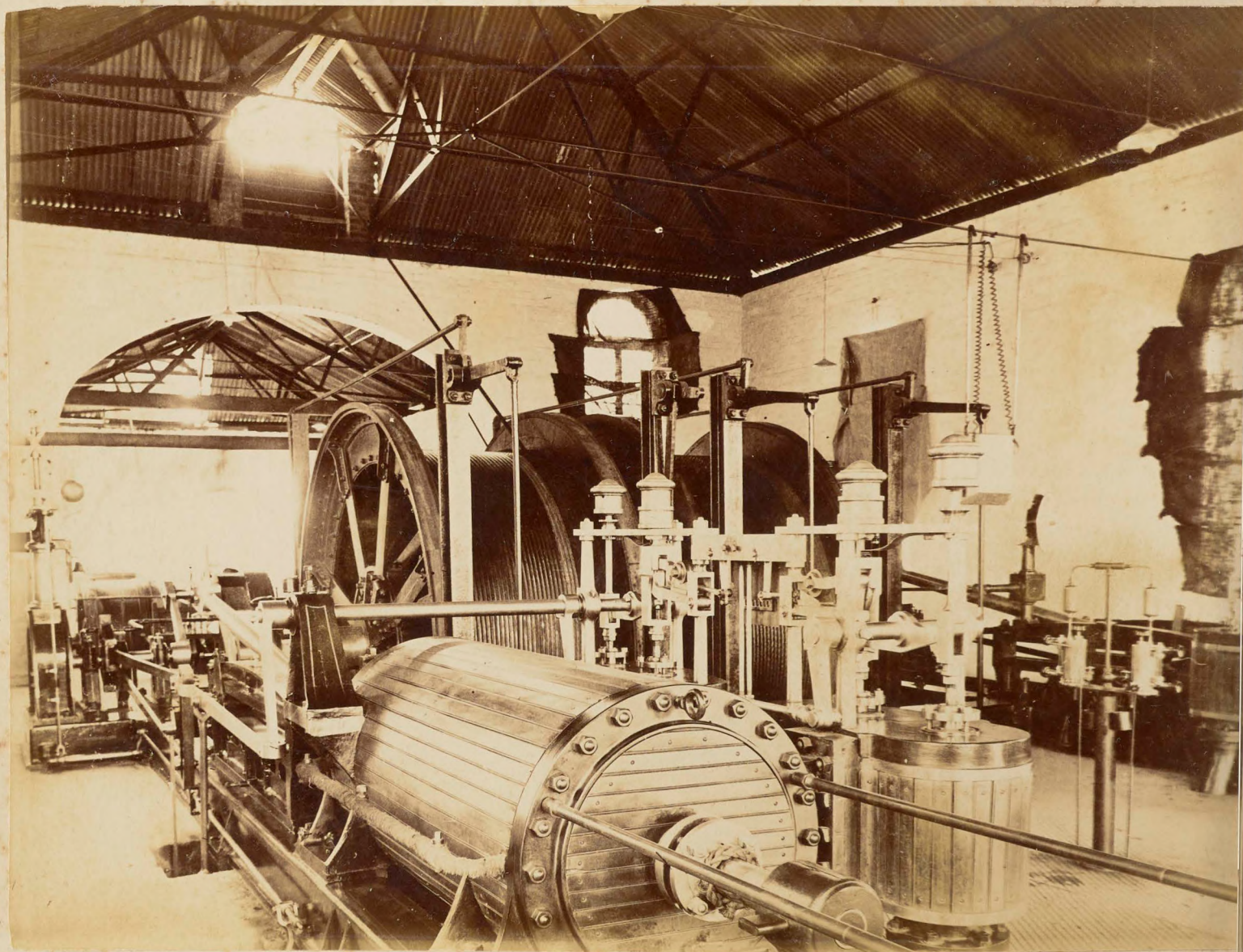
Head Gear Rock Shaft shewing Engine Houses. ✓





The Boilers supplying Steam for Electric Light Plant. Rock Shaft Winding  
Engine. Man-cage and Cornish Pump. ✓

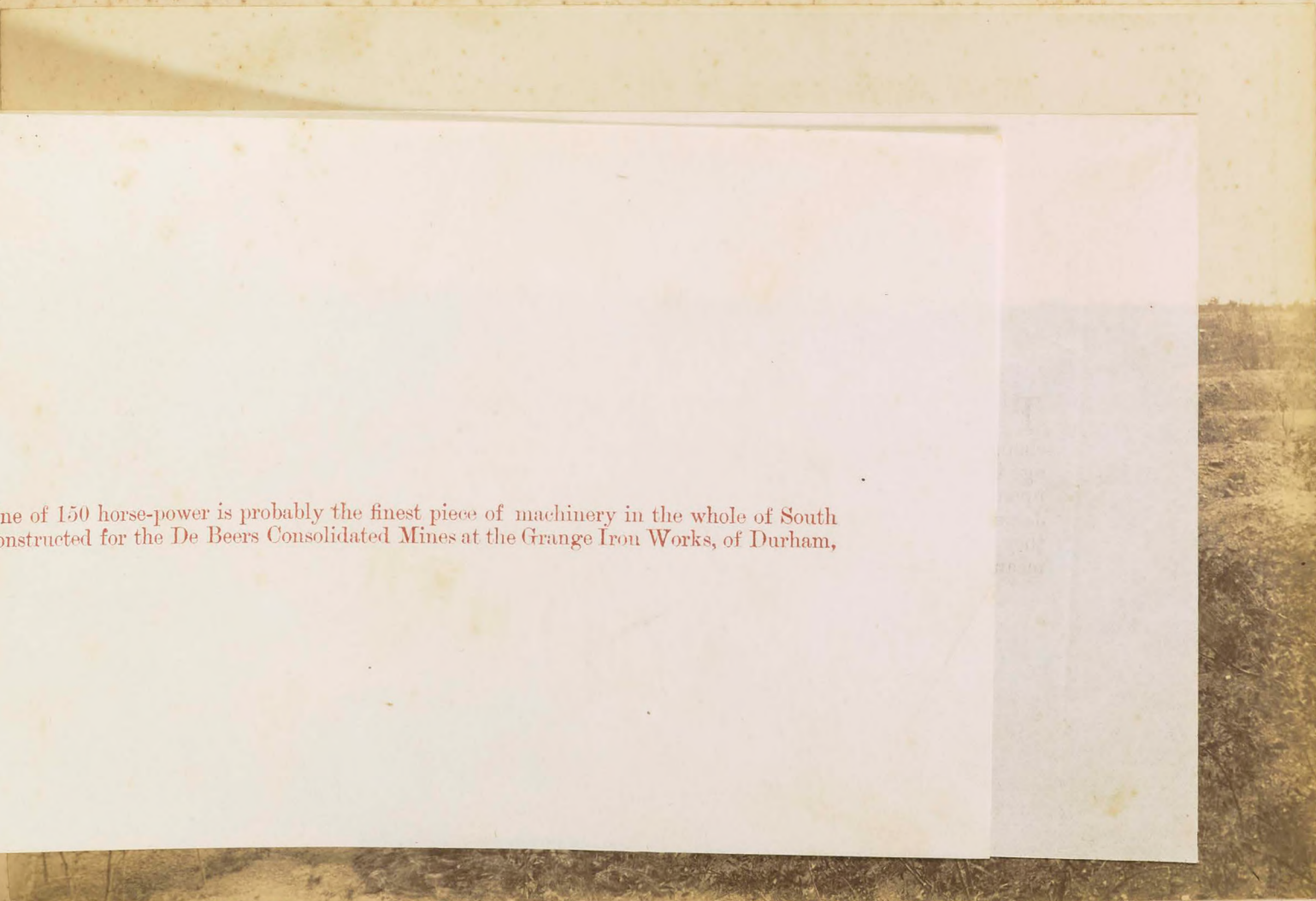




Rock Shaft Winding Engine. 150 h.p. ✓



THIS Winding Engine of 150 horse-power is probably the finest piece of machinery in the whole of South Africa. It was constructed for the De Beers Consolidated Mines at the Grange Iron Works, of Durham, England.



Mechanical Haulage towards Floors. ✓





THE Mechanical Haulage Apparatus has always been considered one of the wonders of diamond winning. Previous to its introduction, the process of conveying the diamondiferous soil had undergone many changes of development, from the humble Scotch cart to the puffing locomotive, with horse and mule draughtage intervening. When the endless mechanical chain first came into vogue, the coloured drivers looked upon the innovation with contempt, the trucks moved so slowly, whether full or empty. These dusky Jehus did not take into account that the trucks were arranged in very close order, and it was not long before they came to perceive that the mechanical haulage was not after all a *schuilpad* (tortoise) but a very quick means of transporting blue ground to the floors.

Rock Shaft Winding Engine. 150 h.p. ✓





Mechanical Haulage towards Floors. ✓

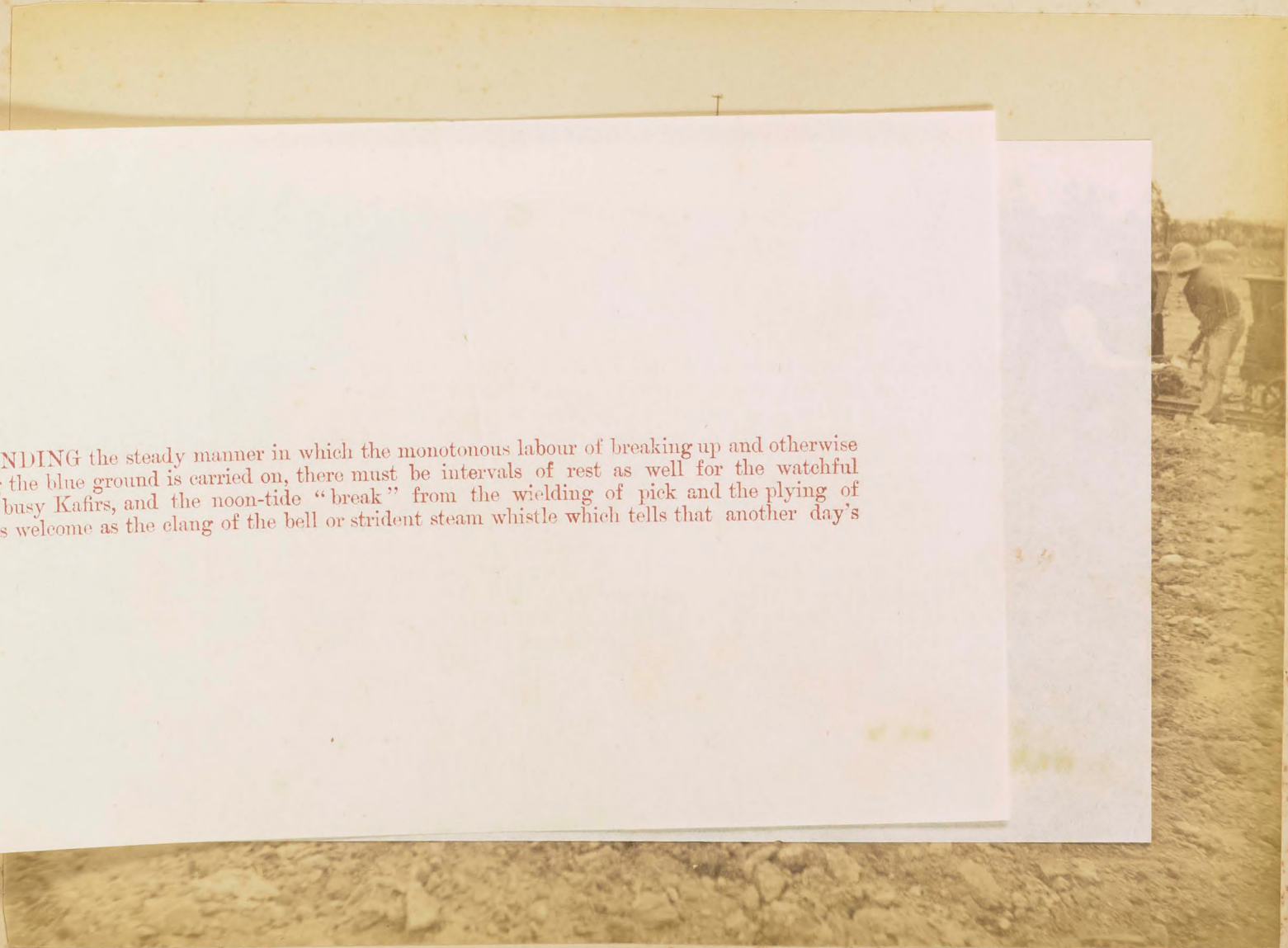




The Floor Employees at their Mid-day Meal.

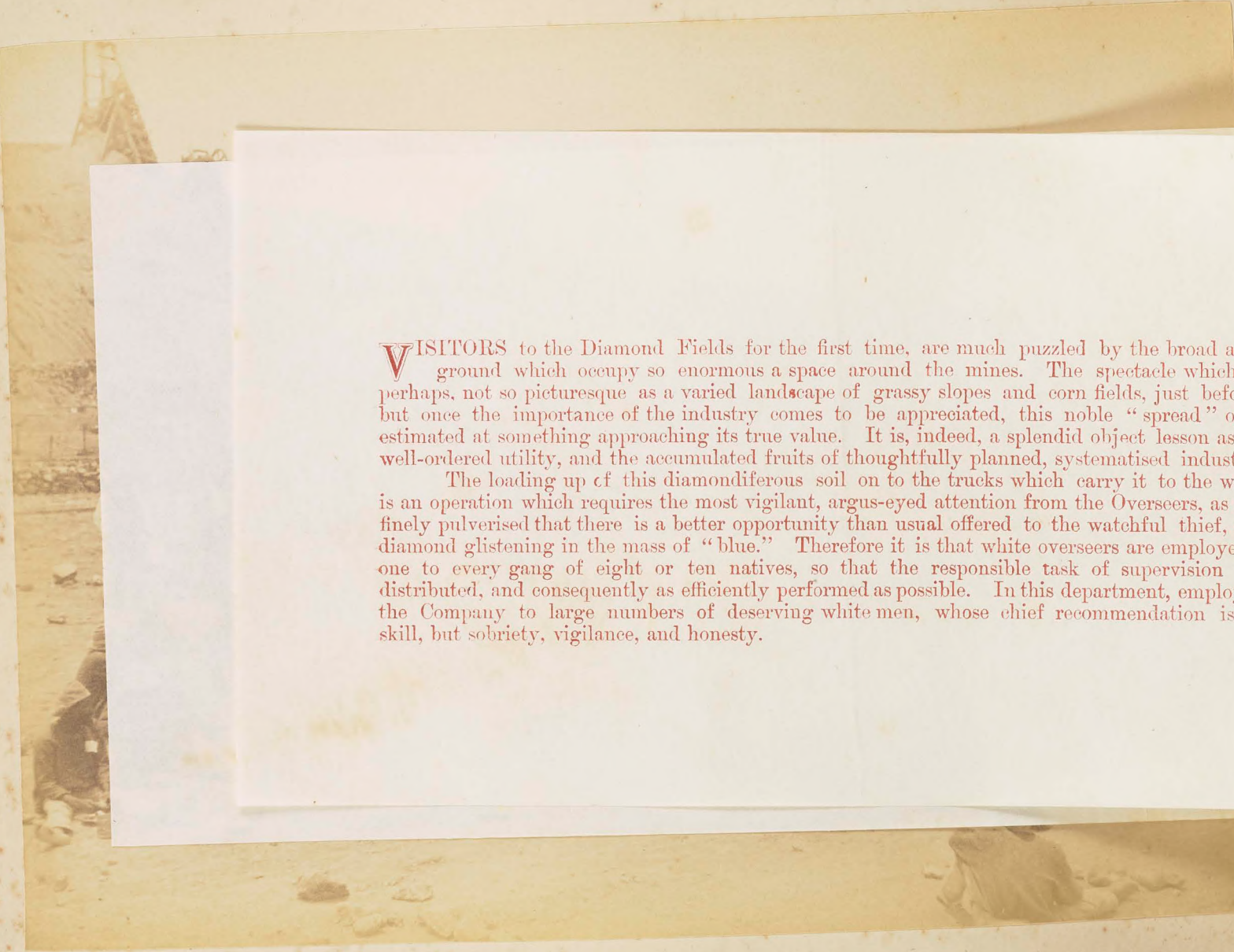


NOTWITHSTANDING the steady manner in which the monotonous labour of breaking up and otherwise manipulating the blue ground is carried on, there must be intervals of rest as well for the watchful overseers as for the busy Kafirs, and the noon-tide "break" from the wielding of pick and the plying of shovel, is almost as welcome as the clang of the bell or strident steam whistle which tells that another day's labour is done.



THE FLOORS.—Loading "Blue" for the Washing Machines. ✓





VISITORS to the Diamond Fields for the first time, are much puzzled by the broad acres of dark blue ground which occupy so enormous a space around the mines. The spectacle which they present is, perhaps, not so picturesque as a varied landscape of grassy slopes and corn fields, just before harvest time; but once the importance of the industry comes to be appreciated, this noble "spread" of valuable rock is estimated at something approaching its true value. It is, indeed, a splendid object lesson as to the beauty of well-ordered utility, and the accumulated fruits of thoughtfully planned, systematised industry.

The loading up of this diamondiferous soil on to the trucks which carry it to the washing machines, is an operation which requires the most vigilant, argus-eyed attention from the Overseers, as the ground is so finely pulverised that there is a better opportunity than usual offered to the watchful thief, of "spotting" a diamond glistening in the mass of "blue." Therefore it is that white overseers are employed in abundance, one to every gang of eight or ten natives, so that the responsible task of supervision may be wisely distributed, and consequently as efficiently performed as possible. In this department, employment is given by the Company to large numbers of deserving white men, whose chief recommendation is not mechanical skill, but sobriety, vigilance, and honesty.

The Floor Employees at their Mid-day Meal.





THE FLOORS.—Loading "Blue" for the Washing Machines. ✓

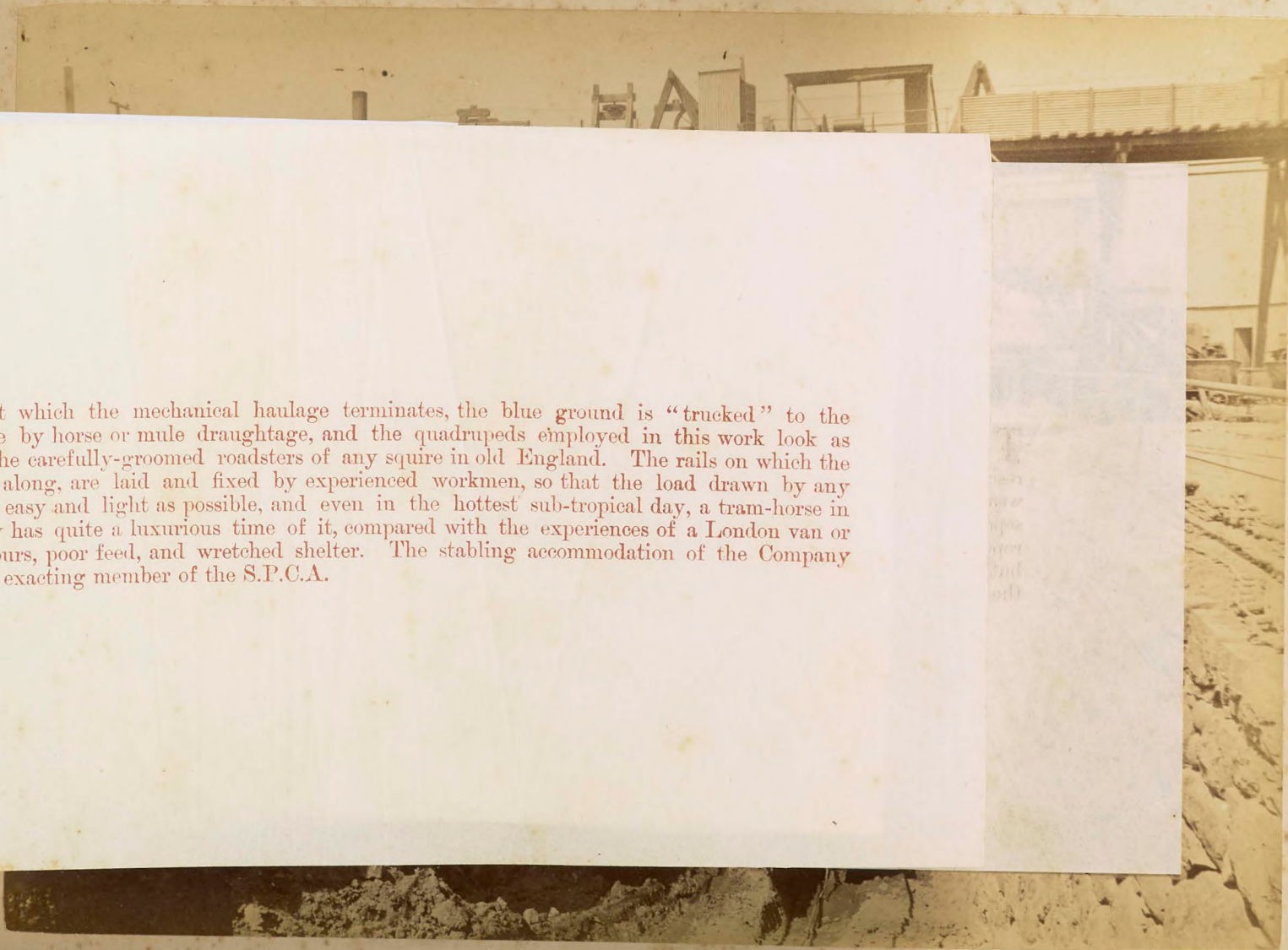




THE FLOORS.—Trucking "Blue" to the Washing Machines.

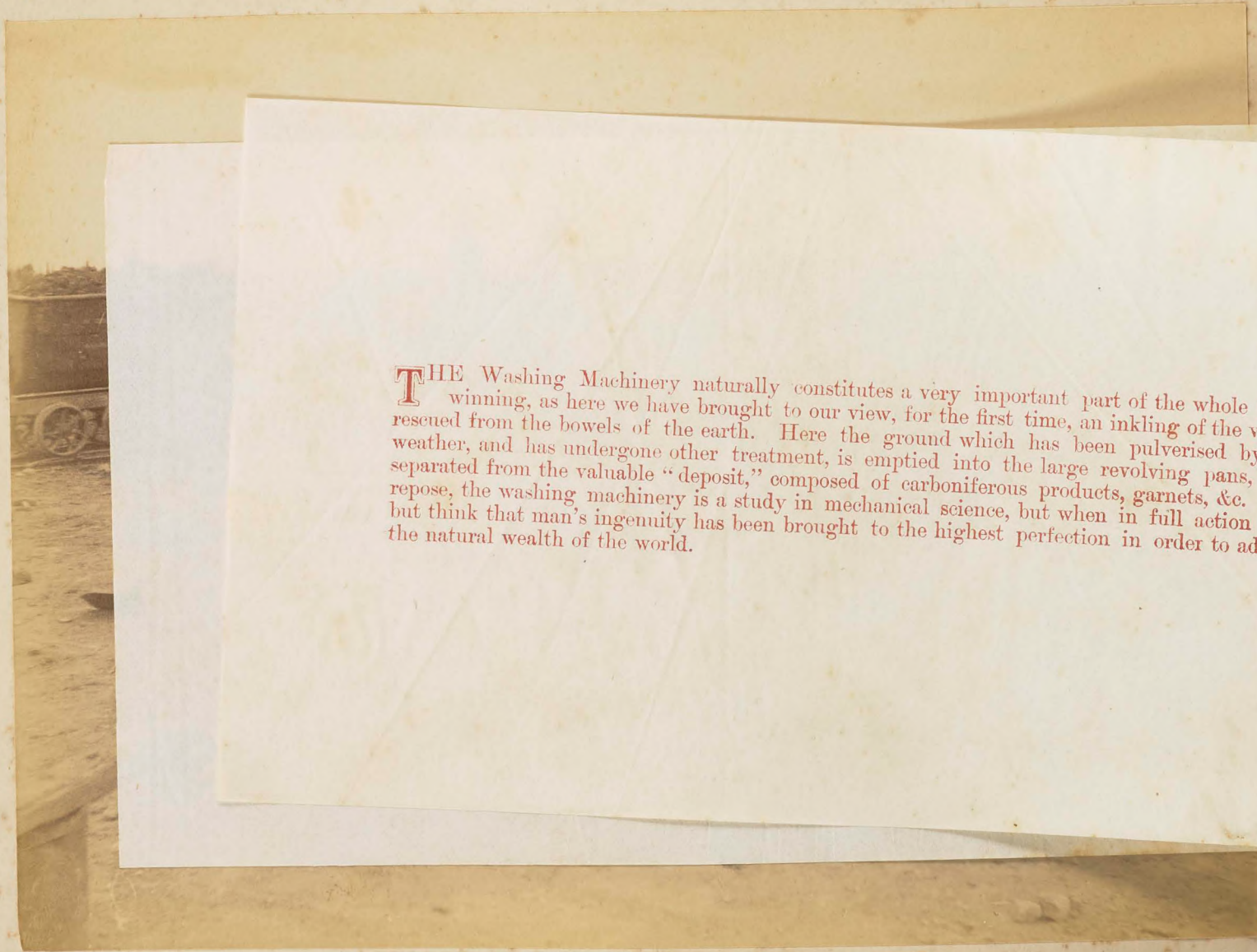


FROM the point at which the mechanical haulage terminates, the blue ground is "trucked" to the washing machine by horse or mule draughtage, and the quadrupeds employed in this work look as sleek and well-fed as the carefully-groomed roadsters of any squire in old England. The rails on which the trucks glide smoothly along, are laid and fixed by experienced workmen, so that the load drawn by any single horse is made as easy and light as possible, and even in the hottest sub-tropical day, a tram-horse in De Beers or Kimberley has quite a luxurious time of it, compared with the experiences of a London van or tram victim of long hours, poor feed, and wretched shelter. The stabling accommodation of the Company would satisfy the most exacting member of the S.P.C.A.



THE FLOORS.—No. 1 Washing Machine. ✓

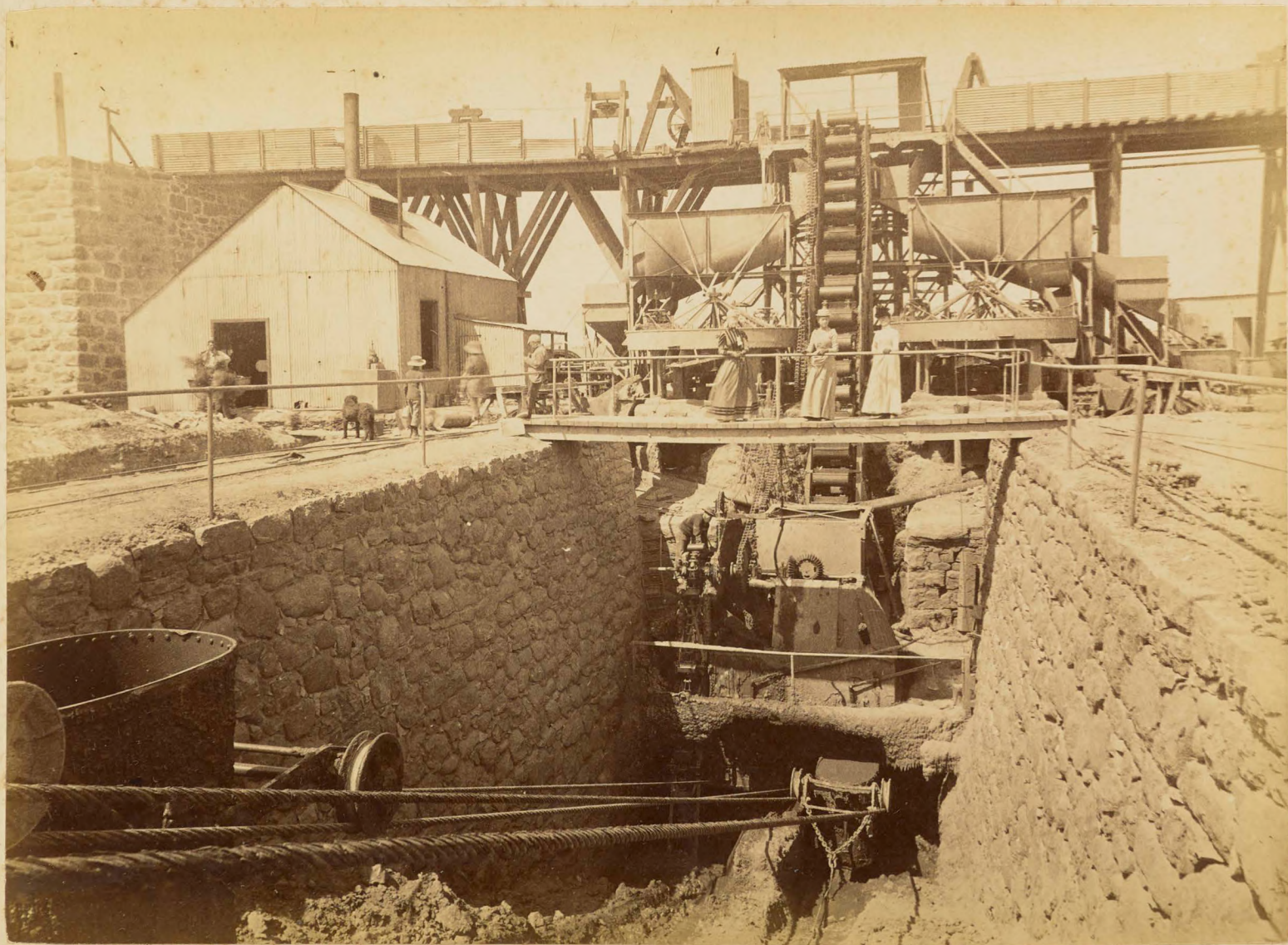




THE Washing Machinery naturally constitutes a very important part of the whole process of diamond winning, as here we have brought to our view, for the first time, an inkling of the value of the material rescued from the bowels of the earth. Here the ground which has been pulverised by its exposure to the weather, and has undergone other treatment, is emptied into the large revolving pans, where the dross is separated from the valuable "deposit," composed of carboniferous products, garnets, &c. In the intervals of repose, the washing machinery is a study in mechanical science, but when in full action the observer cannot but think that man's ingenuity has been brought to the highest perfection in order to add to and distribute the natural wealth of the world.

THE FLOORS.—Trucking "Blue" to the Washing Machines.





THE FLOORS.—No. 1 Washing Machine. ✓





THE FLOORS.—No. 2 Washing Machine. ✓

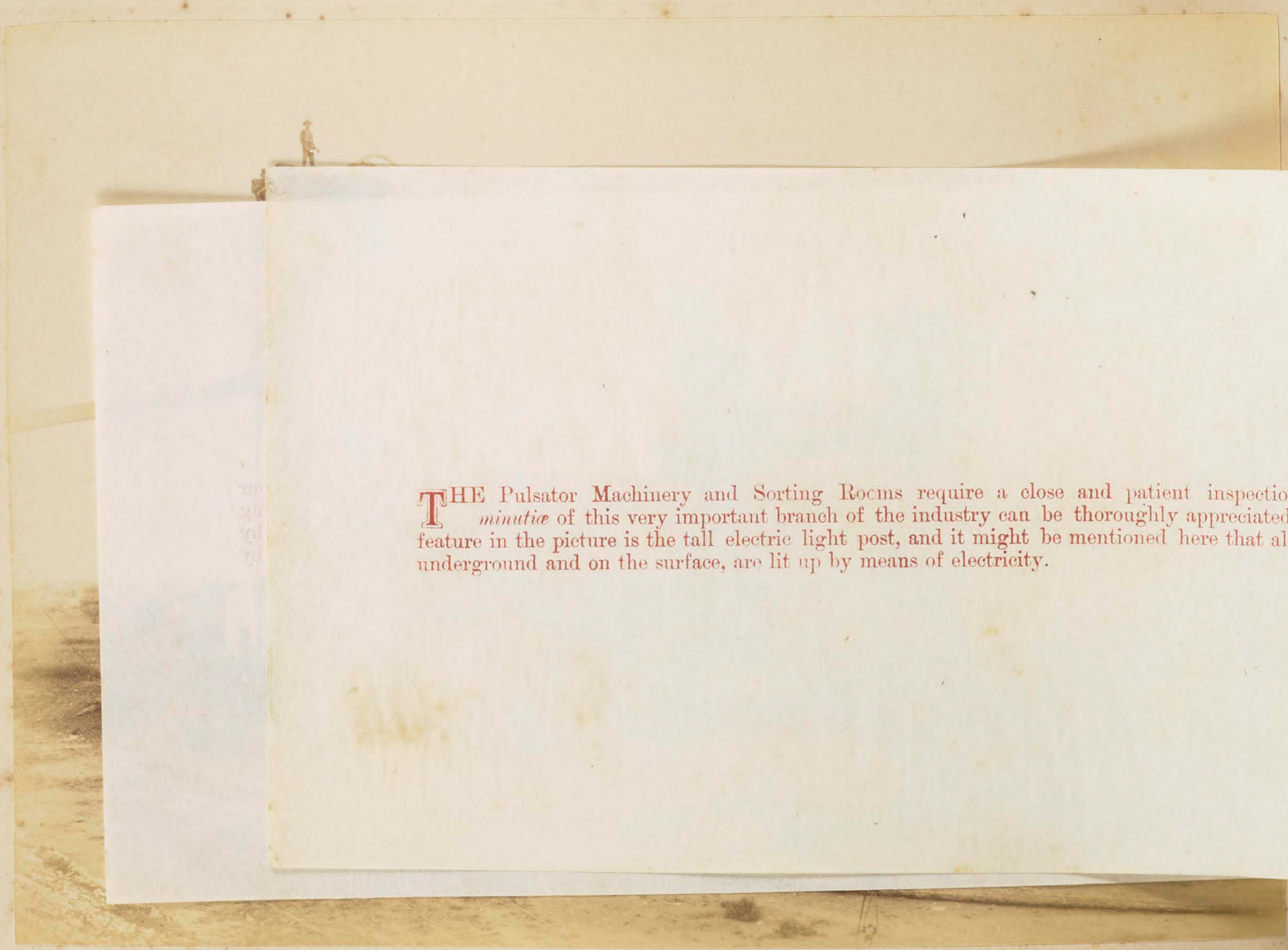


THIS most skilfully planned Diamond Washing Machine is situated on the Kenilworth floors, about four miles distant from the mine. It is of somewhat different construction from the ordinary washing machines, the blue ground being hoisted and tipped automatically, and the tailings being discharged by means of tanks raised and lowered, which also work automatically, the refuse being carried away by means of the Shoot to the left of the picture.



THE FLOORS.—Pulsator Machine and Yard. ✓





**T**HE Pulsator Machinery and Sorting Rooms require a close and patient inspection before all the *minutiae* of this very important branch of the industry can be thoroughly appreciated. A conspicuous feature in the picture is the tall electric light post, and it might be mentioned here that all the Works, both underground and on the surface, are lit up by means of electricity.

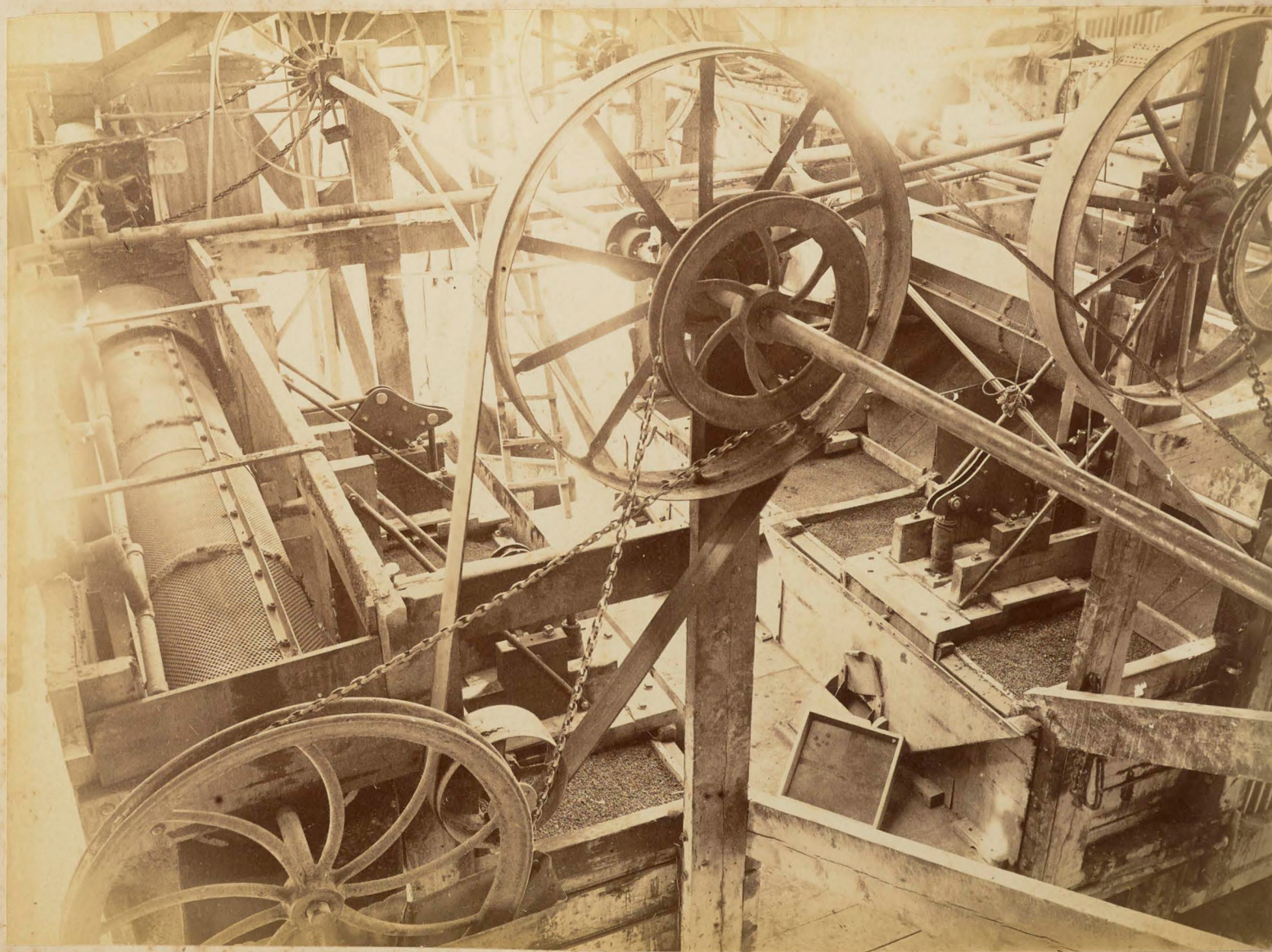
THE FLOORS.—No. 2 Washing Machine. ✓





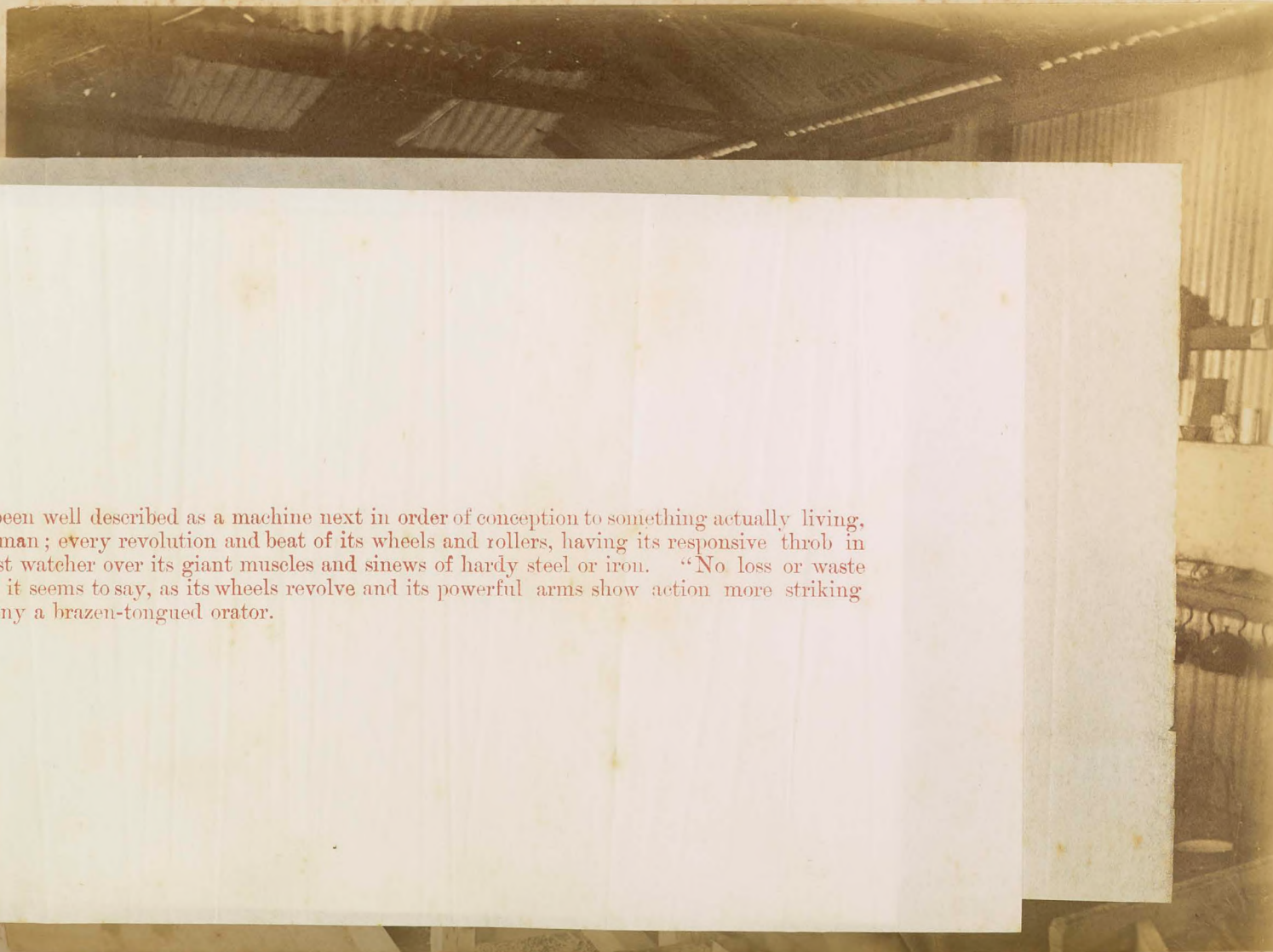
THE FLOORS.—Pulsator Machine and Yard. ✓





THE FLOORS.—Pulsator Machinery. ✓

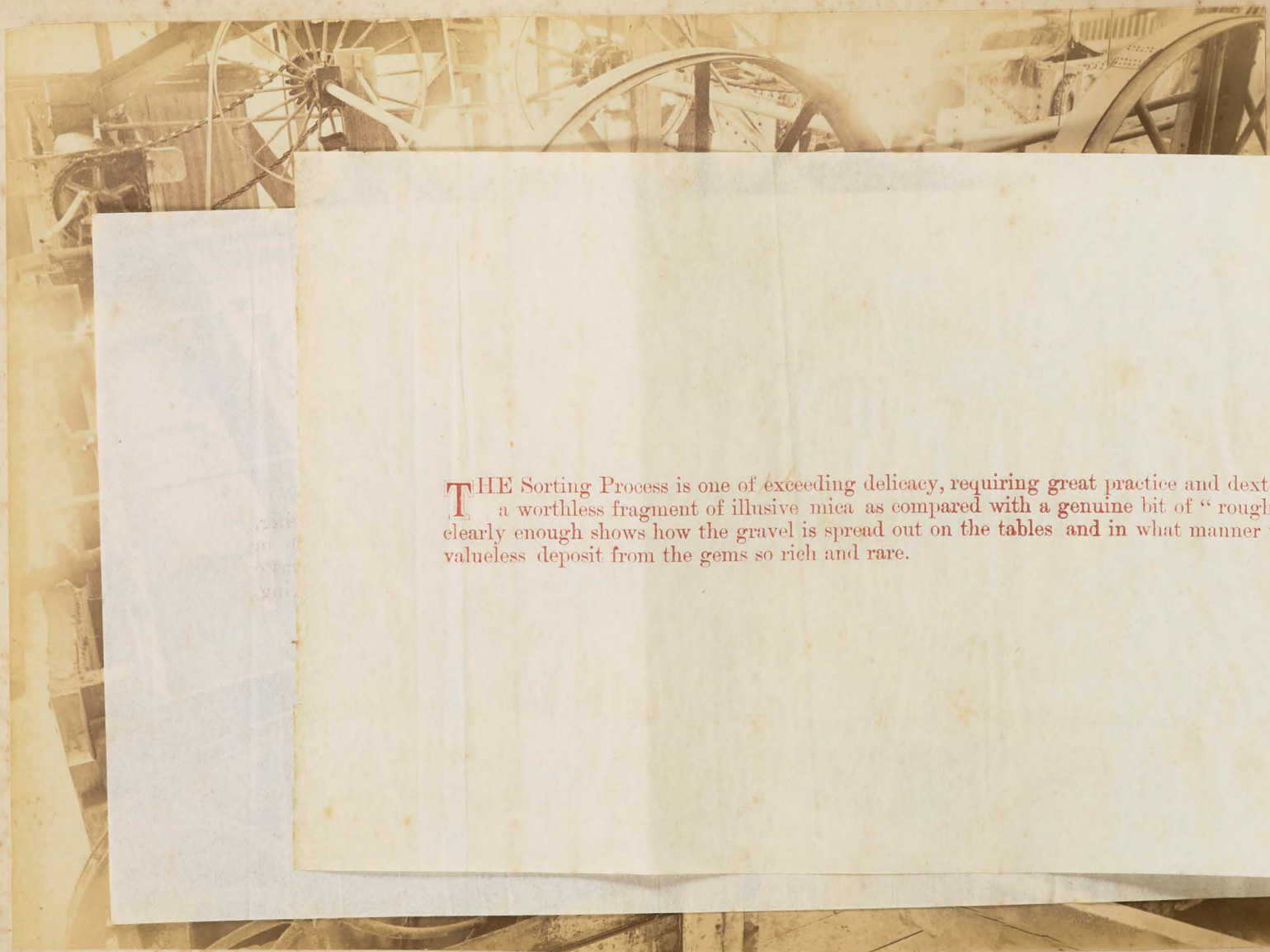




THE Pulsator has been well described as a machine next in order of conception to something actually living, if not indeed human; every revolution and beat of its wheels and rollers, having its responsive throb in the heart of the earnest watcher over its giant muscles and sinews of hardy steel or iron. "No loss or waste of the precious gems" it seems to say, as its wheels revolve and its powerful arms show action more striking and dramatic than many a brazen-tongued orator.

THE FLOORS.—Sorting the Gravel for Diamonds. ✓





**T**HE Sorting Process is one of exceeding delicacy, requiring great practice and dexterity in the detection of a worthless fragment of illusive mica as compared with a genuine bit of "rough goods." The picture clearly enough shows how the gravel is spread out on the tables and in what manner the Sorters separate the valueless deposit from the gems so rich and rare.

THE FLOORS.—Pulsator Machinery. ✓





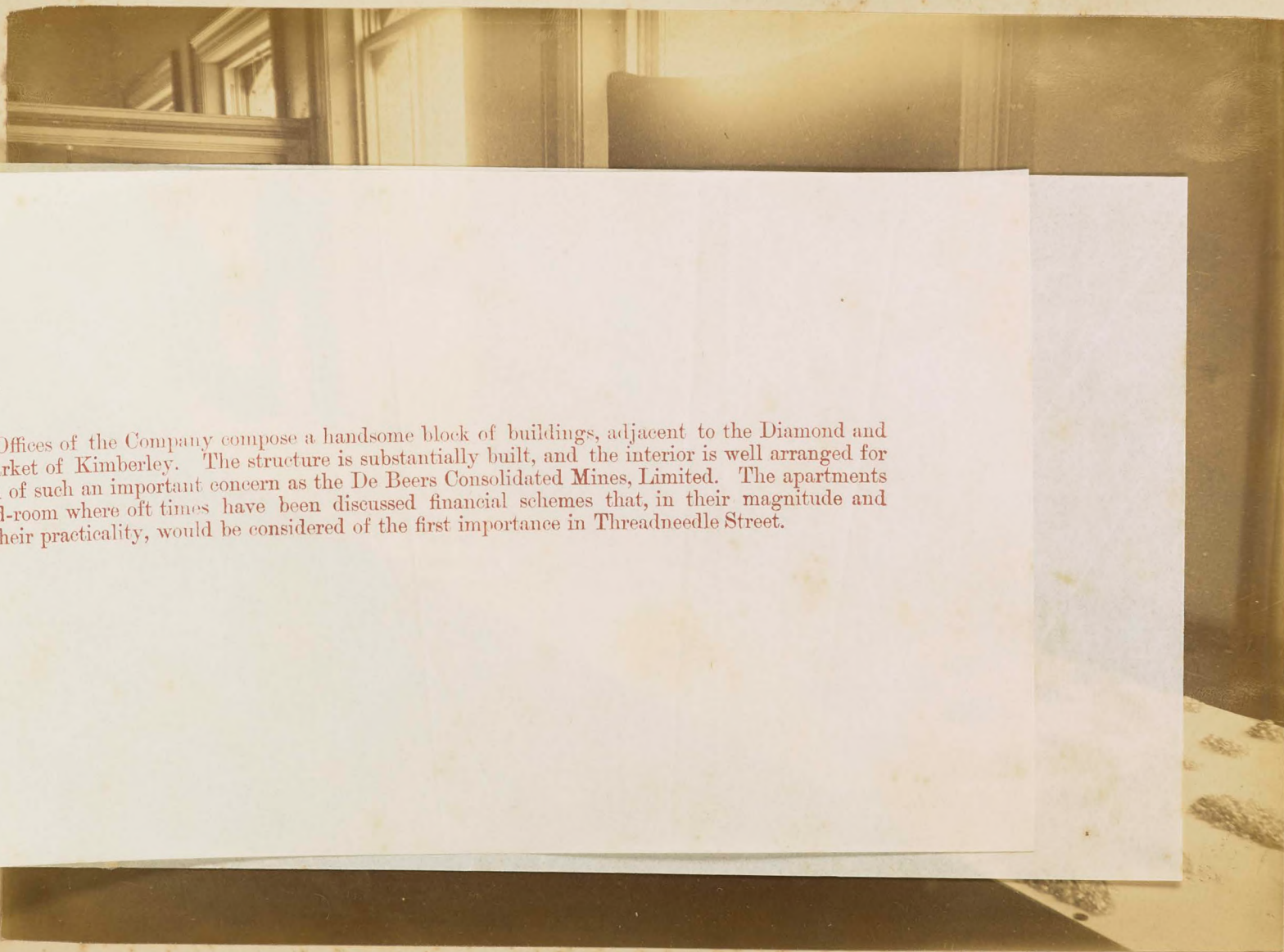
THE FLOORS.—Sorting the Gravel for Diamonds. ✓





Head Offices—"De Beer's Consolidated Mines, Limited."





**T**HE Head Offices of the Company compose a handsome block of buildings, adjacent to the Diamond and Share Market of Kimberley. The structure is substantially built, and the interior is well arranged for the carrying on of such an important concern as the De Beers Consolidated Mines, Limited. The apartments include a Board-room where oft times have been discussed financial schemes that, in their magnitude and what is more, their practicality, would be considered of the first importance in Threadneedle Street.

Diamonds Classified for Shipment, £52,000 O O parcel. ✓



THIS is beyond doubt a splendid exhibition of diamonds, in the Valuing and Classifying Rooms at the Head Offices of the Company. It is not, however, an unusual thing for favoured visitors to see a display of "rough goods" representing a quarter of a million sterling in value, the diamonds ranging from 200 or 300 carats down to the smallest "pin-heads" of crystal, and representing a productive and wage-earning capacity which no single Company in any other part of the world can equal.

Head Offices—"De Beer's Consolidated Mines, Limited."





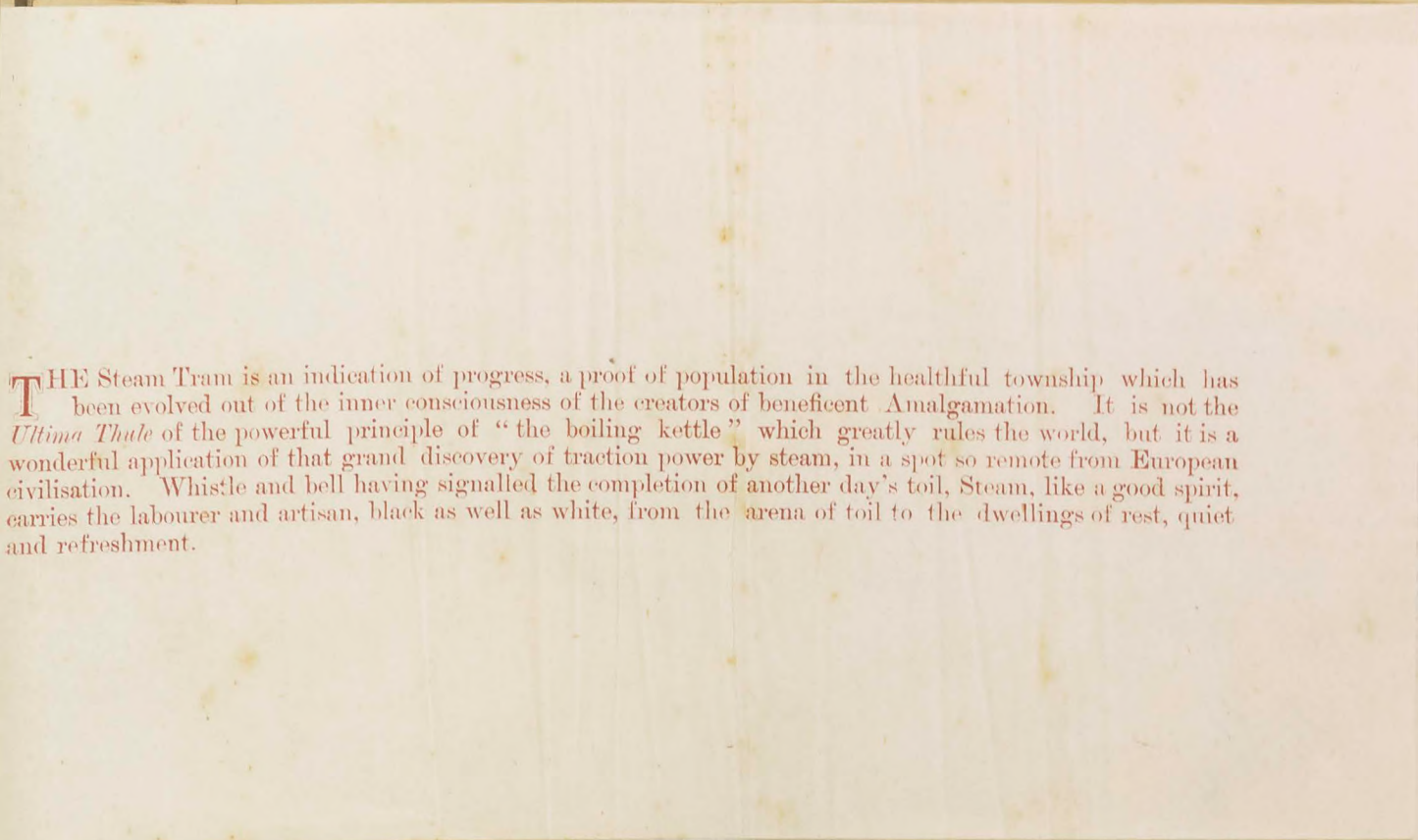
Diamonds Classified for Shipment, £52,000 O O parcel. ✓






Steam Tram.—Employees returning from work.





THE Steam Tram is an indication of progress, a proof of population in the healthful township which has been evolved out of the inner consciousness of the creators of beneficent Amalgamation. It is not the *Ultima Thule* of the powerful principle of "the boiling kettle" which greatly rules the world, but it is a wonderful application of that grand discovery of traction power by steam, in a spot so remote from European civilisation. Whistle and bell having signalled the completion of another day's toil, Steam, like a good spirit, carries the labourer and artisan, black as well as white, from the arena of toil to the dwellings of rest, quiet and refreshment.



Native Quarters.—The Compound.



**T**HE Diamond Mining Compound, in all its infinite variety of life, scene, colour, and animation, cannot be described; it must be seen. Imagine a combination of groupings representing Kafir kraaldom, curiously blended with the signs and portents of civilization, the dusky skin, the picturesque garb, and the striking customs of the Basuto, the Shangaan, or the Matabele, mingling with hints of British pastimes and amusements, and fragmentary illustrations of European sartorial arrangements, and all these elements amid a population of from 1,500 to 2,000 native labourers; then you have a vague idea of the De Beers Compound. Music in one corner; chaffering in another; gossiping here; the politics of the Kraal there; and promenading and dancing to the music of the resonant reed, giving motion and liveliness to the "town within a town." All these are some of the prominent features of the scene. But in every nook and corner, discipline, justice to the native, healthy vigour through abstinence from intoxicating drink, alacrity to the call of duty, cheerfulness, and all the best characteristics of Mankind when being rescued from barbarism, are here to be witnessed.

Steam Tram.—Employees returning from work.





Native Quarters.—The Compound.





European Quarters.—The Village of Kenilworth.































































































